

The United States

MILLER

AND THE MILLING ENGINEER.

Fifteenth Year.—No. 11.

MILWAUKEE, NOVEMBER, 1890.

Subscription Price, \$1.00 Per Year.

"The shallows murmur while the deeps are dumb"

BUT THERE IS NOTHING SHALLOW ABOUT

THE RICHMOND

Grain Cleaning Machinery

AND

BRAN DUSTERS

Neither are they dumb; on the contrary, they speak for themselves, and are conceded to be the best in the world.

It behooves millers who are without them, to immediately procure a line, and improve and increase their output, for these are economical machines and will pay for themselves.

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RICHMOND MANUFACTURING CO.

LOCKPORT, N. Y., U. S. A.

CAWKER'S

American Flour Mill & Grain Elevator Directory

FOR 1890-1891

It contains: 1. A list of Flour Mills in each State, Territory and Province, with names of owners, P. O. and county; in thousands of instances giving their capacity in barrels per day, kind of power used, etc., also indicating such firms as are supposed to be worth \$10,000 and upwards. Total number of mills given, 17,145.

2. A list of miscellaneous mills, such as Corn, Oatmeal, etc.
3. A list of Millwrights.
4. A list of Grain Elevator Owners and Grain Dealers.

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E. HARRISON CAWKER, No. 124 Grand Avenue, - MILWAUKEE, WIS.

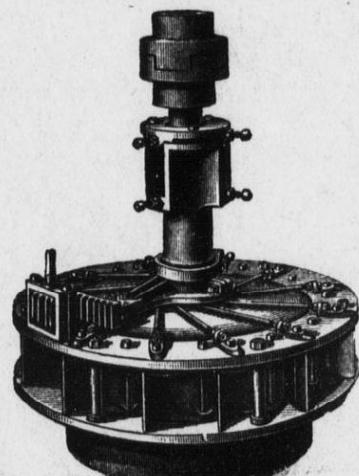
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Comprising the LARGEST and the SMALLEST Wheels, under both the HIGHEST and LOWEST Head in this country. Our New Illustrated Book sent free to those owning water power.

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"WESTERN"
MILL SHELLER.

The most Compact, Durable, Best Sheller and Best Cleaner.

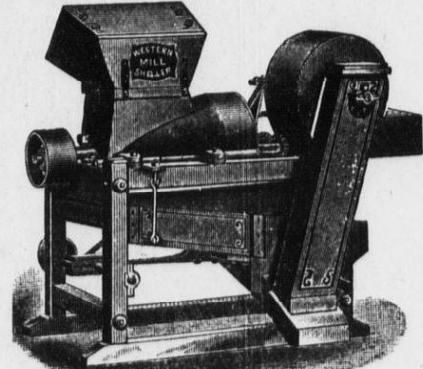
Takes up but little room, runs at low rate of speed, requires no attention. It is in every respect the

Best Sheller ever offered to the Public.

Please mention this paper. Write for full particulars to

UNION IRON WORKS, - DECATUR, ILL.

Mfrs. of "Western" Shellers, Cleaners, Separators, and all kinds of Elevator Machinery.



5. A list of well-rated Flour Brokers, Merchants and BAKERS in all parts of the United States and Canada, which has been compiled with extraordinary care, capital and credit being considered in the compilation.

6. A list of Foreign flour and grain importers, secured by our own special correspondents and believed to be thoroughly reliable. In short, it is a complete KEY for reaching the Flour and Grain Trade, enabling ANY department of the trade to reach ANY other desired.

The price is invariably Ten Dollars per copy, on receipt of which it will be sent, post paid, to any part of the world. The complete work only is sold. We do not supply lists for single states. These Directories have been issued every two years since 1878, and have been declared indispensable by the prominent mill-furnishers, flour brokers, millers, etc., of this country and Europe. Address,

E. HARRISON CAWKER, No. 124 Grand Avenue, - MILWAUKEE, WIS.

“RUNS LIKE A CLOCK”

WATERTOWN, WIS., July 23d, 1890.

THE EDWARD P. ALLIS COMPANY,

MILWAUKEE, WIS.:

GENTLEMEN—It gives us pleasure to say that our Globe Mill, rebuilt by you and completed and running since June 1st, is giving us splendid satisfaction in every respect. The machinery is well located, and runs like a clock, smooth and easy. The quantity of wheat per bbl. of flour has been considerably lowered, the quality of flour greatly improved, and the mill is doing everything you guaranteed. We hereby acknowledge our acceptance, and shall be pleased at any time to have you refer other parties to us for further particulars regarding the mill in general or any of the machinery.

We remain, yours truly,

THE GLOBE MILLING CO.,

Capacity, 450 Barrels.

G. MAY, Secretary.



The above mentioned mill is fully equipped with **Gray's Noiseless Belt Roller Mills, Gray's Improved Centrifugal Reels, Gray's Patent Flour Dressers, Reliance Sieve Scalpers and Reliance Purifiers**, arranged upon our latest improved system, with the **BEALL CORRUGATION** on break rolls. The results speak for themselves.

If in want of anything in our line, write for prices.

THE EDW. P. ALLIS COMPANY

* Mill Builders and Mill Furnishers, *

RELIANCE WORKS,

MILWAUKEE, WIS.

A HOLIDAY PRESENT.



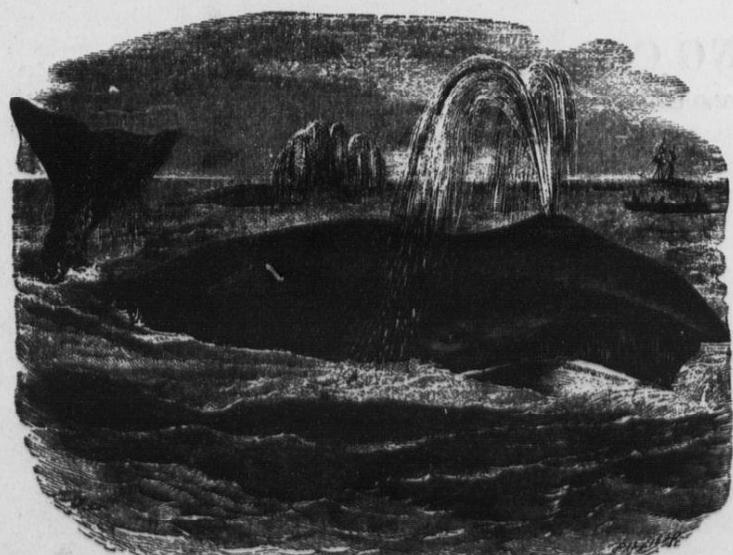
ZEBRA.—*Asinus' Zebra*.



THE AUDAD.—*Ammotragus Tragelaphus*.



THE HEDGEHOG.—*Erinaceus Europaeus*.



GREENLAND WHALE.—*Balaena mysticetus*.

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BY REV. J. G. WOOD, M. A., F. L. S.

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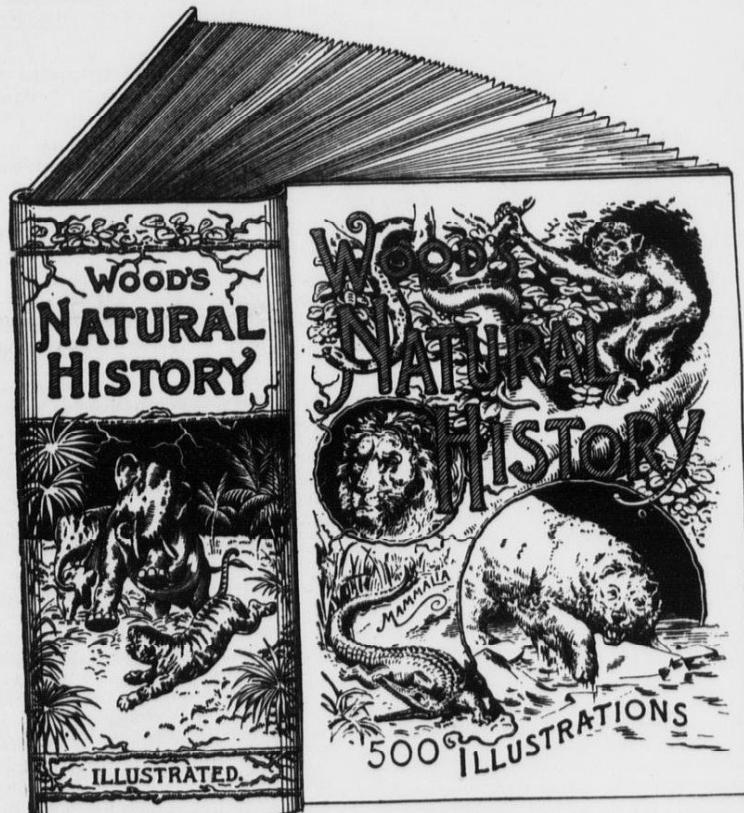


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This great work enters into the most minute details in describing the haunts, habits, diseases and peculiarities of the wild and domestic animals of the world.

Send us \$3.50 by Post Office or Express Money Order, or Bank Draft on New York or Chicago, and we will send you the UNITED STATES MILLER AND MILLING ENGINEER for one year and a copy of WOOD'S NATURAL HISTORY as here described.

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1890-91

EDITION JUST OUT, NOVEMBER 25, 1890.

♦ THE RIVERSIDE ♦
FLOUR * CODE
COMPILED EXPRESSLY FOR THE USE OF
FOUR EXPORTERS AND IMPORTERS.

Thoroughly revised to meet all the requirements suggested by members of the Millers' National Association and others; together with new and valuable tables, covering flour invoices at varying prices, for various quantities; also freight tables, figured with inland and ocean rates.

It enables shippers and receivers to make out and verify their documents in a moment, with a certainty of being correct.

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It is the STANDARD Flour Code, and more copies of it are now in use than all others combined.

This CODE has been approved and is used by the best firms in America and Europe. It contains Flour Tables, Bran Tables, middlings Tables, Flour Grades and Brands, Time of Shipment, Dates, Names of Places, American Currency, Sterling Quotations, Table on Limits, etc., Drawing, Credits, etc., and Shipments on Joint Account, Miscellaneous, Market Upwards, Market Downwards, Insurance, Shipping and Freight, Shipping by Regular Lines of Steamers, Finance, Bankers' Names, Standing of Firms, Telegraphing Advices, Commission, Stocks and Crops, Weather, Samples and Quality, Equivalent of Sacks in Barrel Quantities, Commission Tables, Interest Tables, Equivalent Flour Prices in Currency, Sterling, Francs, Guilders and Marks, Comparative Tables, Sack and Barrel, Ocean Freight Rates (Comparative Table), Sailings from Seaboard (Table), Key to Sailings from Seaboard Table, Foreign Weights and Measures, etc. We respectfully refer to the following well-known firms: S. H. Seamans, Treasurer of the Millers' National Association; E. Sanderson & Co., (Phoenix Mills), Milwaukee, Wis.; Daisy Roller Mills, Milwaukee, Wis.; Roots & Co., (Millers), Cincinnati, O.; C. H. Seybt (Miller), Highland, Ill.; Cosmack, & Co., (Flour Brokers), Glasgow, Scotland; J. F. Imbs & Co., (Millers), St. Louis, Mo.; Winona Mill Co., Winona, Minn.; Herrick, Kirk & Co., New York; Acme Milling Co., Indianapolis, Ind.; W. H. Jones, New Brighton, Eng.; Chas. Kreutziger, Heidelberg; Wm. Paddock & Co., Terre Haute, Ind.; Mandan Roller Mill Co.; L. R. Finch's Sons, New York; Jupiter Mills, Milwaukee; Morse & Sammis, Minneapolis, Minn.; Faist, Kraus & Co., Milwaukee; American Starch Co., Columbus

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[Written for the UNITED STATES MILLER AND MILLING ENGINEER.]

MILLING THOUGHTS.

By J. F. MUELLER.

A FAIR test as to whether wheat is being thoroughly scoured is to examine the inner casting of the hopper on the first break rolls. A layer of dark brown dust here and often in the hopper of the second break rolls are conclusive proof that the wheat in those mills might be more thoroughly cleaned. Something is likely to be wrong with the proper ventilation in the scourer. The fan openings or valves may not be in proper working order. Cleaners are sometimes overloaded, owing to their being scarcely large enough for the amount of work that is required of them. I often find, however, that one great fault is the manner in which a machine is belted. The driving belt, in a great many cases, is barely sufficient to drive the machine under ordinary circumstances. In the case where a cleaner is fed from an elevator the flow of wheat is very irregular—some of the elevator buckets are full to the extreme, while others are entirely empty. Thus a considerable allowance should be made in applying a belt of sufficient width.

**

No mill, however small its capacity may be, should be without at least one separator. A line of cleaners to be complete should include one receiving separator, one milling separator and two scourers, or one scourer and a brush machine. I have noticed the specifications of some mill furnishing agents, in presenting their propositions, to include two scourers and separators combined. While every scourer is, or should be, provided with an air trunk, it is not calculated to make a separation any more than to carry off the scourings loosened in the scouring case. To remove successfully all foreign substances there should be first a receiving or loosing separator, with adjustable sieves. By this machine the miller is enabled to give his wheat a fair cleaning before storing. It will take out all coarse foreign substance, such as sticks, straws, etc. It is not intended to separate the oats from the wheat, although a great many oats will be drawn out as well as screenings. It is invaluable for storing wheat, which will keep better if stored for any length of time. The smut being drawn out, prevents the wheat from having a musty smell. It also prevents the spouts from choking when feeding the scourers. It saves both time and money to the miller. They have become a necessity in merchant mills, and all millwrights and mill furnishers include a receiving separator in their plans and estimates when getting up a new first-class mill.

The milling separator is particularly intended to draw out dust, dirt, weeds, cockle, chess and oats. It is a machine that is a positive necessity in every first-class well-regulated mill.

**

We all know how frequently flour mills have been remodeled and fully equipped with the most perfect rolling, purifying and dressing machinery, while the wheat-cleaning departments were never even looked into. It is also pretty well known

that whereas all this outlay and labor has been spent on the mill proper, uniform good results were not always obtained, and that a change from one kind of wheat to another greatly altered the quality and value of the flour produced, the difference showing itself more pronouncedly in the "patents." In fact impurities showed themselves in the middlings, which no amount of manipulation on the purifiers could eliminate. Millers who carefully studied the matter and made microscopical examinations, found that much of the impurity was mineral matter, and in searching back found that the wheat cleaning machinery was unequal to the task of removing this matter completely. Others overlooked the cause and condemned the wheat, which, if properly and sufficiently treated, would have yielded a high-class flour.

As well as mineral matter, there is frequently found among the middlings small foreign particles of about the same size and practically the same weight as the particles of middlings, which, when ground, become reduced to fine powder, pass through the reels and contaminate the flour. This is owing to the fact that some seeds about the same size and gravity as the wheat have not been extracted.

**

Everything points to the necessity which exists for securing in the first place the most perfect arrangement possible for thoroughly cleaning and polishing the wheat berry, while extracting every particle of foreign matter, if the highest standard of flour is sought after.

We have to keep in view the fact that, owing to our dependence on the markets of the world for the greater portion of our wheat supplies, particularly when milling on a large scale, the varieties of quality are numerous, and that provision should be made to handle each and all of them to the best advantage, always remembering that the arrangement must be so comprehensive that any change of wheat containing from the least to the greatest variety of foreign matter, or varying in size from the smallest to the largest, can be dealt with in a satisfactory manner.

A NEW FLOUR MILL AT NORFOLK, VA.

THE quaint old city of Norfolk, now nearly 200 years old, with its numerous places of historical interest, its large grain elevators and grand shipping facilities, both by rail and water, has never heretofore numbered amongst its business industries, a flouring mill. Being somewhat removed from grain growing districts, the possibility of shipping in grain and grinding at home seems never to have occurred to its own business men. A party of Tennessee capitalists, however, wishing to embark in the milling business and recognizing the possibilities of Norfolk as a good location for milling, at once formed a stock company—"The Norfolk Milling Co."—and purchased the two best sites obtainable for mills. They placed their contract for erecting the mill with The Nordyke & Marmon Co., of Indianapolis, Ind. The mill will be built with all the latest improvements and the contract includes motive power. In a short time this venerable city will have one of the

best flour mills in the country in full operation. The company is officered as follows: Jno. D. Thomas, President; Chas. Harmling, Vice President; C. B. Price, Secretary and Treasurer; S. M. Elliott, Manager, all of Bristol, Tenn. The enterprise will doubtless prove a financial success in an eminent degree.

OUR LEGAL DEPARTMENT.

Specially prepared for The United States Miller and Milling Engineer, from the latest decisions.

INFRINGEMENT OF TRADE MARK.—Where one has an established trade mark, for which he has built up a reputation, any interference with the use of that trade mark or the enjoyment of its reputation, is an infringement. Where the name of an article of merchandise is its trade mark, it is infringed by a merchant who gives out a similar article which is of different size and shape, and which has another name plainly marked upon it, when the person to whom it was sold asked for the article covered by the trade mark. He must deliver the article asked for, or explain that he has not got it in stock. The substitution of another article, though not in any way an imitation of the one asked for, is an infringement.

Enoch Morgan's Sons vs. Wedover, Circuit Court of the United States, District of New Jersey, 43 Fed., Rep. 320.

WHEN TITLE PASSES ON SALE OF GRAIN.—When a sale is made of a certain number of bushels of grain to be taken from a large bulk of which they are apart, the title does not pass until that sold is separated from the rest. Where there is a contract of sale of personal property, and anything remains to individualize and identify the particular property intended to be sold, such as counting, weighing, measuring, or separating from a larger mass or bulk, no title passes to the purchaser, such as will maintain in his favor an action of trover. This is for the simple reason that the particular part of the property or chattels contracted to be sold and delivered cannot be ascertained by precise identification.

Warten vs. Strange, Supreme Court of Alabama, 8 South, Rep. 231.

NUISANCE FROM CONDUCT OF LEGITIMATE BUSINESS.—Smell and odors arising necessarily from the proper conduct of a manufacturing business, even though all possible precaution be taken to mitigate them, may yet be nuisance, if they result in rendering adjacent property substantially unfit for occupancy, and to constitute such nuisance it is not necessary that the occupants of the adjoining dwellings be actually driven from their homes—it is enough that they are made permanently and seriously uncomfortable. Nor is the fact that such nuisance is maintained by a company which is chartered by the state to carry on that business out of which such odors and vapors necessarily arise any excuse, for notwithstanding its charter, it is subject to the duty of so locating its works that others shall not be injured thereby.

Bohan vs. Port Jervis Gas-Light Co. Court of Appeals of New York, 25 N. E., Rep. 245.

FIRM NAME AS TRADE MARK.—A name which describes a general business and does not specify the particular firm to which it applies, as "International Banking Company" is a generic term which cannot be appropriated by one firm to the exclusion of all others in the same class of business. A firm using such a name under such circumstances which is not engaged in banking business cannot secure an injunction restraining other persons from using the same words as descriptive of their business, for they themselves have no right to do that in which they seek to establish an exclusive privilege, and equity will only interfere to aid those whose own hands are clear from wrong.

Koehler vs. Sanders, Court of Appeals of New York, 25 N. E., Rep. 235.

RULE OF LAW REGARDING CONTRIBUTORY NEGLIGENCE.—In an action to recover damages sustained by reason of negligence of another, where it appears that the one injured did not exercise himself the degree of care due from him, it is a correct statement of the law in the case that where both are guilty of negligence the injured one cannot recover, and that the law will not stop to measure the degree of negligence on the part of the complainant. The question is not as to which one is most negligent, or as to which is most responsible for the accident; if the one injured was negligent at all, he cannot recover.

Milford vs. Long, Supreme Court of Pennsylvania, 20 At. Rep. 425.

ABSENCE FROM WORK AS GROUND FOR DISCHARGE.—Enforced and temporary absence from work which does not interfere with the fulfillment of the contract of employment as a whole, is not good ground for the discharge of an employee. If such an absence, however, is willful and intentional without just or necessary cause or excuse, it is an infraction or duty which will justify discharge.

Fisher's. Monroe, City Court of New York, 11 N. Y. Supp. 207.

"BOHEMIAN OAT" TRANSACTION.—A transaction whereby 10 bushels of oats, of the actual value of 30 or 40 cents a bushel, are delivered by one party to the other, upon an agreement that the party receiving the oats should execute his note for \$100, the party furnishing the oats agreeing in turn to sell 20 bushels of oats to be delivered by the maker of the note at the price of \$10 per bushel, both parties having full knowledge of the actual value of the oats, is a wagering contract, and void as between the parties.

Schmueckle vs. Waters, Supreme Court of Indiana, 25 N. E. Rep. 261.

RECOVERY OF GOODS OBTAINED BY FRAUD.—Where it can be shown from the circumstances surrounding the case, corroborated by admission made by the purchaser, that goods were obtained on credit by him without any intention of paying for them, the creditor need not only rely upon his right of judgment against the debtor, but may recover the possession of such goods as remain with the purchaser in an action of replevin, and this right remains as against the assignee of the debtor, as he can only take the rights by assignment which his assignor had to give, and he takes these rights subject to all the adverse rights against them, held by others.

Koch vs. Lyon, Supreme Court of Michigan, 46 N. W. Rep. 779.

MALICIOUS PROSECUTION.—One cannot be subjected to an action for malicious prosecution, who has fully and fairly stated the facts upon which his action is brought to a regularly admitted attorney at law, by whom he is advised that he has a good ground for action.

Coggswell vs. Bohn, Circuit Court of the United States, District of Minnesota, 43 Fed. Rep. 411.

PROPER CONDUCT OF BUSINESS AS A NUISANCE.—The fact that a business is carried on in a careful and prudent manner and that nothing is done by those managing it which is not necessarily incident to the proper conduct of the business, will not authorize them to continue carrying on in a populous neighborhood, a business which by the noxious character of the odors, fumes and vapors, necessarily incident thereto produces constant physical inconvenience and injury to the persons living in the immediate neighborhood, and if such business is carried on by a corporation, the officers may be convicted personally for maintaining a nuisance.

People vs. White Lead Works, Supreme Court of Michigan, 46 N. W. Rep. 735.

INJURY OF YOUTHFUL EMPLOYEE BY MACHINERY.—A boy thirteen years old was injured while operating a lath saw. The evidence showed that he had at various times operated the saw with which he was injured, but that there were saws adapted to the same work which presented a much less degree of danger in operating. Under these circumstances a verdict for \$7,500 is not excessive and will be sustained where the injury resulted in the loss of the right hand to the boy at this age.

Sprague vs. Atlee, Supreme Court of Iowa, 46 N. W. Rep. 756.

LIBEL BY SEALED LETTER.—Where the statutes make it a criminal offense to send a sealed letter to another which contains matter that would be libelous if published, that may authorize a criminal prosecution, and under its provisions no civil action for the recovery of damages can be brought. There must have been a publication to others by the sender, in order to sustain a civil action.

Warneck vs. Mitchell, Circuit Court of the United States, Western District of Tennessee, 43 Fed. Rep. 428.

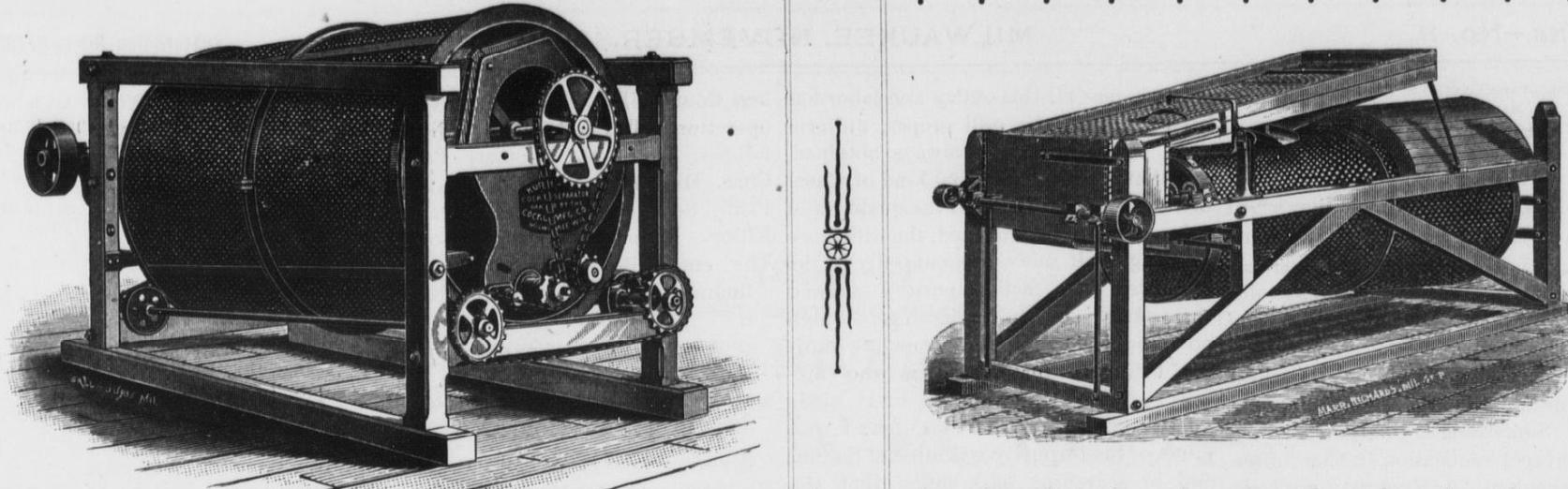
DELIVERY OF GOODS TO HOLDER OF BILL OF LADING.—Certain goods were ordered in an assumed name and the bill of lading issued in the name assumed. The purchaser presented the bill of lading and the goods were delivered to him by the carrier without requiring him to identify himself. Although the goods were delivered to the actual person who purchased them and to whom the bill of lading was issued they were in fact delivered to a person whose name was different from that expressed in the bill of lading, and as the transaction was fraudulent the railroad company was liable to the consignor for the value of the goods.

Sword vs. Young, Supreme Court of Tennessee, 14 S. W. Rep. 481.

The Kurth Cockle Separator

THE PIONEER COCKLE SEPARATOR

And the machine that is running and giving satisfaction in thousands of mills in this country. Years of work prove its usefulness and durability.



We are now prepared to furnish these Separators in three styles, with either reel or sieve graders, and also with or without oat separator attachments. We are also prepared to furnish machines of small capacity, suitable for small mills, without any grader, simply the cylinder and catchboard in a simple frame, at low prices.

These machines are supplied with steel cylinders, if desired. When you buy, get the best. It is cheapest in the long run.

FOR CATALOGUES, PRICES, ETC., ADDRESS

COCKLE SEPARATOR MFG. CO.
MILWAUKEE, WISCONSIN.

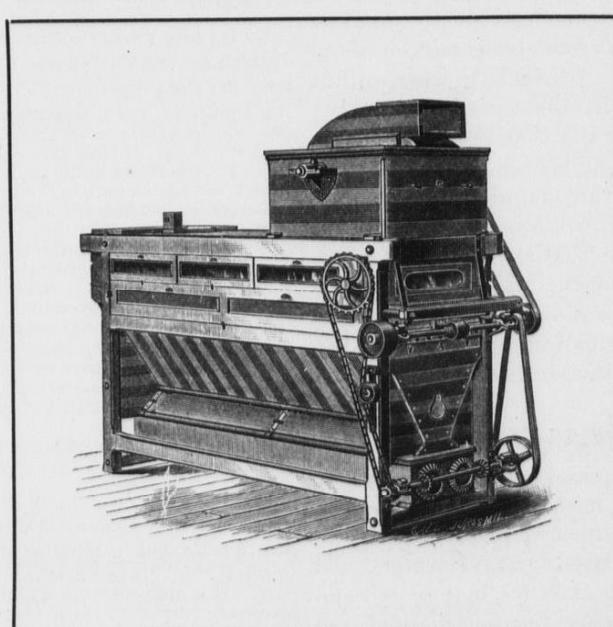
THE NEW ERA SCALPER

THE PIONEER SIEVE SCALPER.

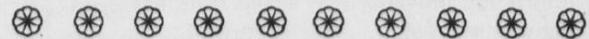
Does better work, and more of it, than any other Scalper on the market. Is working successfully in all sections of the country, on all grades of wheat, and is sent under guarantee to give satisfaction or no sale.



Write for circular giving list of millers using this machine, and go and see its work. If you do, you will see that it will be to your advantage to use it. The above circular also contains numerous testimonials, of which we give a couple of samples.



One machine, with sieve 40 inches wide, will handle one break in 500 bbl. mill; two breaks in 200 to 250 bbl. mill, or four breaks in 100 bbl. mill. Two machines can be driven with a 3-inch belt over a 5-inch pulley. Does not scour the bran, giving a clear break flour and an improvement in all grades.



SHEBOYGAN, WIS., April 26th, 1890.

SUPERLATIVE PURIFIER MFG. CO., Milwaukee, Wis.:

Gentlemen—The two New Era Scalpers purchased of you two months since have been running continuously ever since. They have done all you claimed for them, and we would not now be without them. They have made a most remarkable change in the appearance of all stocks in the mill. We heartily recommend them to the milling fraternity.

Very truly yours,

WM. ELWELL & SON.

MIDWAY, PA., August 5th, 1890.

SUPERLATIVE PURIFIER MFG. CO., Milwaukee, Wis.:

Gentlemen—The New Era Scalper bought of you has now been running for about three weeks, with perfect success. As short a time as it has been in operation, I would say that I would not be without one for three times its cost. It has improved the whole product of the mill. It's a grand improvement over the reel scalper; takes only about one-tenth of the horse power, and am satisfied the machine could be run successfully with a 1½-inch belt.

Yours truly,

D. BLACK, miller for ROBBINS & BAMFORD

FOR CATALOGUES, CIRCULARS, ETC., ADDRESS

SUPERLATIVE PURIFIER MFG. CO.
MILWAUKEE, WISCONSIN.

ALSO MANUFACTURERS OF

The Superlative Purifier and Superlative Bran Duster.

UNITED STATES MILLER
AND THE MILLING ENGINEER.

E. HARRISON CAWKER, EDITOR.

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MILWAUKEE, NOVEMBER, 1890.

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WE send out a number of SAMPLE COPIES of each issue. We solicit a critical examination of our Journal and invite you to subscribe. The price is one dollar per year. No premiums—no discount.

ARMOURDALE, a suburb of Kansas City, is to have a 350-bbl. mill.

THE good work of organizing district millers associations is continually going on, and they are always productive of good results.

THE next meeting of the Kansas State Millers' Association will be held at McPherson, Ks., on the second Tuesday of January, 1891.

OUR correspondence columns are full this month, and our readers will serve their own interests by following them through carefully.

WE will furnish the UNITED STATES MILLER and weekly Northwestern Miller for one year for \$3.25, or with any monthly milling journal for \$1.50.

JOHN F. BLAKE, mayor of Canton, O., and a leading Ohio miller has made an assignment. His liabilities are said to be \$50,000, with large assets.

WE would advise all who like to be "quick at figures" to send to the United States Miller for "100 Lessons in Business," price, post-paid, \$1.00.

ANOTHER mutual fire insurance company has been organized. Its headquarters are at Minneapolis and it is called The Western Millers' Mutual Fire Insurance Co. It will insure flour mills and elevators exclusively.

OUR Baltimore correspondent "Oriole" makes some very interesting observations in his letter printed elsewhere in this number, which millers will do well to note carefully. The Baltimore trade is worth cultivating, and it should be done in a proper manner.

MILL-OWNERS desiring to reach the dealers in flour, grain and feed in all parts of this country and Europe, should send for "Cawker's American Flour Mill and Grain Elevator Directory for 1890," which contains all desired information. Price \$10, postpaid to any address. See adv. on first page.

OF two Republican papers speaking of the McKinley Tariff bill, the Chicago Tribune, says the bill should be repealed at once, adding that the greatest and the most inexcusable blunder of the McKinley bill is that it adds largely to the cost of the clothing of all the people of the United States, and is therefore a palpable burden to every person. The other, the St. Louis Globe, says, "if a statesman was in any way in a position to dictate to the majority in Congress, he would bring about a thorough revision of the McKinley law in

the coming short session. Every article advanced by that Act would be reduced to the old rates or lower, and the free list would be enlarged".

THE largest output of flour ever made in Minneapolis was during the week ending Oct. 16, 1888, and was 187,000 barrels. The nearest approach to that week's work was during the week ending Nov. 15, 1890, and was a little over 185,000 barrels. Minneapolis millers are anxious to forward as much flour as possible before an advance in freight rates.

WE desire to impress upon the minds of parties sending us communications through the mail the necessity of having their name and address legibly written thereon. We are in receipt of two remittances for subscriptions accompanied by no clue whatever, except postmark, as to the senders. We give here what information we have in hopes that the proper parties will notify us and enable us to rectify matters. Postmark—"Lyons & Sayre, R. P. O., Oct. 28, 1890 South." — Postmark—"Saint Louis, Mo., Oct. 30, 7 P. M."

THE new edition of the Riverside Flour Cable Code is now printed and in the binder's hands. It will be ready for delivery Nov. 21. It is an improvement on former editions and meets all demands suggested by users in different parts of the world. It is the only flour cable code worthy of the name, and more copies of former editions are in use than all other flour codes in existence. No miller attempting to do an export business can afford to be without this new edition. For terms etc., address the Riverside Printing Co., Milwaukee, Wis.

THE Northwestern Miller is urging millers on the occasion of the next annual meeting of the Millers' National Association, to take a trip to Europe. Could a reasonably large number be brought to agree to go, it would doubtless be very enjoyable and instructive. We do not believe, however, that more than the usual number of millers will go abroad during the coming year, and they will go and come when and where their individual wishes dictate. It is not every miller that can afford to "take in" Europe, and those that can, as a rule prefer to "go it alone".

THE past month has been one of political and financial cyclones. London and New York have each had to stand a terrible financial strain. The New York disturbance was ascribed to the recent astounding changes made by the November elections, which is all said to be a public condemnation of the policy of the Republican party in general and the McKinley bill in particular. The English financial troubles are said to be in a large measure due to extraordinary investments in Argentine Republic affairs. We trust that another month's record will show all danger past and business in general in a more settled state.

A CITIZEN of a small town in Indiana wrote to the Edward P. Allis Co., of Milwaukee, Wis., regarding the purchase of a roller process flour mill. He dwelt upon the importance of his enterprise, what a big thing it was to be; but certain remarks therein, gave the recipients the correct idea that he wanted the smallest mill they furnished. Allis & Co. wrote for further particulars, or invited the writer to visit their office and explain his wants in person. In a few days he showed up and stated that his mill was going to be the king mill of that county and would be next in importance to the court house, and its ownership would give him such a social standing as would allow him to call Mr. Voorhees "Dan" before a whole crowd. While a proposition was being made out for a 30-barrel mill, an attend-

ant showed him through the shops, which are at this time unusually full of work. Upon his return to the office after about two hours absence, he said: "Say Mister, I hain't traveled much or been very far from home, but I see now that I've been making a darned fool of myself. I imagined the Allis shops was about the same size as the machine-shop down in our county-seat. On the cars coming here, I was chuckling to myself how I would show you fellars under, and make you work nights and Sundays all winter getting out my mill. Don't you think my machinery would get lost in these shops and never turn up again? Say, if it's a fair question, how much does it take to pay off your hands?" "About \$75,000 a month," was the reply. He was in a brown study until his contract was ready when he got up to leave with the parting remark: "Well, good-by, I'm going to tell Jim Briggs, what owns the headin' factory at our town, that his shebang is nowhere and sort o' take him down a bit."

IN answer to many inquiries we desire to say that "Cawker's American Flour Mill and Grain Elevator Directory" is of great value to all merchant millers, for it furnishes the names and address of flour brokers, wholesale flour dealers, prominent bakers, and dealers in grain and mill-stuffs. It is a key to all departments of the trade, and is reliable.

NOTES ON THE ROAD.

THE Hughes Steam Pump Co., Cleveland, O., have removed from their old quarters to a large, airy, handsome manufacturing building, which they have erected on Brunswick street, near St. Clair st. They are running to full capacity, and have orders away ahead.

THE Avery Stamping Co., Cleveland, O., are thriving and have all the work they can do. H. W. Caldwell & Son, of 131 W. Washington st., Chicago, Ill., handles their buckets exclusively.

MESSRS. DOBSON, CRAWFORD & Co., of Cleveland, O., are meeting with great success in placing their "Little Wonder" machine for bolting. The writer has seen numbers of letters from the best millers in the country, commanding their machine.

THE John T. Noye Mfg. Co., Buffalo, N. Y., are working overtime to keep up with their orders. Not only have they a brisk demand for their Rice engines, but they say they have not been so crowded with flour mill work since 1882. Mr. H. R. Howland, the obliging secretary, showed the writer through the entire works, and we found it a complete plant indeed, able to turn out the finished manufactured products in their lines from the raw material.

THE Roller Mill, Buffalo, N. Y., we found flourishing under the able management of Messrs. Burdick & Co., and Mr. Parke the genial editor. A. B. Kellogg, formerly editor of the paper, is now publishing a financial paper devoted to investments.

GEO. URBAN and A. R. James, the well known Buffalo millers, are on deck, as usual and as some one said in our hearing "they always weigh 16 ounces to the pound."

OUR Buffalo correspondent in his regular letter elsewhere in this paper gives the latest Buffalo notes from a Board of Trade point of view.

S. HOWES, of Silver Creek, N. Y., manufacturer of "Eureka" grain cleaning machinery, reports business excellent. The foreign trade has grown to handsome proportions, and shipments of car-loads of machinery consigned to foreign countries is a matter of frequent occurrence.

MESSRS. HUNTLEY, CRANSON & Co., Silver Creek, N. Y., have built up a wonder-

ful trade in grain cleaning and buckwheat machinery during the past two years, and have found it absolutely necessary to enlarge their plant, which they are now doing. Their elevator separators have won a place in a number of the largest modern elevators in the West. We were deeply interested in a testing machine (patented by Mr. Huntley) which secures a perfect running balance in all his machines. It is the only machine of the kind in the country and might be used to great advantage in balancing any wheel or pulley designed to revolve at considerable speed. This company has a branch at 63 S. Canal street, Chicago, in charge of Mr. B. F. Ryer, who attends to all Western business.

GEO. B. DOUGLAS, formerly of "Dixie" and now editor of the *Silver Creek Local*, is about to perpetrate another milling paper on the dusty fraternity. It is to be called *The Honest Miller* (wonder which one he refers to), and is to be humorous in character and of course is destined to fill "an aching void." We are all ready to laugh —Let 'er go G—orge.

AT Erie, Pa., we ran plump into the arms of our old friend Joe Karns—great big-hearted Joe—whom all the old time millers will be glad to learn is doing well. He is now on the road for the Lima Machine Works, Lima, O.

THE Stilwell & Bierce Mfg. Co., Dayton, O., are full of work in all departments, except that devoted to flour mill machinery. U. H. Odell, their milling engineer, reports a fair share of trade, but no boom.

THE Dayton Globe Iron Works Co., Dayton, O., which succeeds the old firm known for the past generation as Stout, Mills & Temple, is doing well. They make no machinery specialty adapted to flour milling, their line including the manufacture of water-wheels, hangers, castings, etc.

THE Eureka Mfg. Co., Dayton, O., report trade very light.

THE Bradford Mill Co., Cincinnati, O., are having a lively time to keep their customers supplied with Dunlap Bolts. They seem to please wherever they are tried. This Company has also a large department exclusively devoted to the manufacture of iron-working machinery and tools. They have booked orders from many of the largest establishments East and West.

THE Bradford Belting Co., Cincinnati, O., has increased its facilities and is able to supply the trade promptly with their goods.

THE Lane & Bodley Co., Cincinnati, O., are always busy and Mr. Thompson, the secretary, is the busiest man, we think, in Cincinnati. They have an immense trade in the South and West, as well as North of the Ohio river.

THE Jonathan Mills Mfg. Co., Columbus, O., are pushed to their utmost capacity to keep up with orders especially for the new "Air Belt Purifier," which has stood the test of practical use.

THE Case Manufacturing Co., Columbus, O., are busy as usual supplying the demands of their customers.

THE J. B. Alfree Co., of Indianapolis, Ind., are rushed with mill work of all kinds. Their orders come from as far north as central Wisconsin. They are also doing a lively business in Southern States.

THE Nordyke & Marmon Co., Indianapolis, Ind., are busy as usual. They have some very large contracts on hand as well as innumerable small ones. They anticipate an excellent business for the ensuing year.

UTILIZATION OF WATER POWER AT GENEVA.

WHETHER the Niagara shall ever be harnessed to the wheels of machinery or not, the Rhone has actually been made to furnish motive power to the industries of Geneva. Indeed, this was done on a small scale long ago. As early as 1708 a hydraulic motor was constructed for pumping water, and 50 years ago another larger one was provided for the same purpose. The work of these, however, was simply to supply water to the city, and 10 years ago they were discontinued and steam power put in their place. Meantime many plans had been considered for making more extensive use of the water power of the swift river, and in 1882 the municipal authorities of Geneva commissioned Col. Turrettini, the engineer of the St. Gothard tunnel, to undertake the job. In the course of the next year he perfected his plans, and on their approval, the work was begun. It has now been completed, and so successful is it that a very considerable extension of it is soon to be made.

The river, as it passes through the city, is divided into two channels by an island covered with buildings. Col. Turrettini proposed that the right arm of the river should be reserved for running off the water, while the left arm, transformed into an industrial canal, was to conduct the water into a building to be constructed in the bed of the river, and in which would be placed, as they were required, 20 turbines with 4,400 net horse power. The whole of this work is now done, except that only half the turbines are now in use. The method of distributing the motive power gave rise to a good deal of discussion, but as Geneva does not possess any large manufactories for which transmission by cable is suitable, the system of transmission by hydraulic pressure was adopted, and the municipality decided to make two canalizations, one with low and the other with high pressure, the latter with an ascending force of 460 feet.

A curious feature of this work was the successive emptying of the two channels of the river. While each was dry the entire population of the city flocked into it, led by curiosity. Several great public banquets and other festivities were held in each of the river beds. The channels were then made deeper and a uniform slope made from the mouth of the lake down to the turbines. Opportunity was also taken to construct upon the banks of the stream large sewers, which run along the two banks of the lake and of the Rhone for a distance of more than three miles. These sewers empty into the Rhone below the town, and thus prevent the water, which is used by the inhabitants, from becoming contaminated. From a hygienic point of view, this has been most successful, the number of deaths from typhoid fever last year being only nine out of a total population of 73,000.

As an industrial enterprise the work is a great success. At the commencement of this year there were no less than 216 industrial motors with a force of 1,565 horse power. All kinds of trade and industry make use of the water power, while the amount of force varies very much, the minimum being a third of a horse power for sewing machines, and the maximum, up to the present, 625 for an electric light company. The total cost of the work has been \$1,420,000, of which about \$1,000,000 has been for the account of the municipality, while the gross return upon the sale of water in 1877 reached \$115,000, or 150 per cent. more than it was nine years before, which, after deducting all the cost of maintenance, staff, interest and paying off the capital invested, leaves a clear profit of \$27,500. The demands for more motive power is steadily increasing, and it is anticipated that in a few years' time all the turbines will be in use, and that the municipality will have to fall back on the opportunity of obtaining, at an island some

way down the Rhone, a fresh motive force of 7,000 horse power and transmit it to Geneva by electricity.

CONNECTING STEAM PIPES TO BOILERS.

AFTER boilers are properly arranged and set up, the next important point to be considered is the arrangement of the main steam pipes and their connections, for unless these are properly designed and put up much trouble is apt to ensue. The points

at once that the boilers were rigidly bound together, by this arrangement. After a short time the tee on No. 2 cracked off as shown at A; this was replaced with a new one, and soon afterward the pipe connecting the two boilers broke off at B. Both these breaks occurred while the boilers were in use, and of course resulted in their stoppage until the broken pieces could be renewed. The only strange thing in connection with the affair was the fact that the breaks did not occur the first time steam was gotten up.

to expansion, or the settling of the foundations or walls.

Figures 2 and 3 show what we consider a properly-designed arrangement of steam connections for a battery of boilers. Wrought-iron pipe is used. To the nozzles risers are attached by means of flanges, and from the upper ends of these risers pipes are led horizontally backwards into the main steam-pipe. In this horizontal pipe, the stop valves, one to each boiler, are placed. These valves should have flanged ends as shown, so that they may be easily removed, if repairs become necessary, without disturbing any other portion of the piping. The engraver has inadvertently shown the valve C in an upright position. It should, of course, be horizontal, or nearly so, in order that it may not trap water. Such valves are often put in at a slight inclination, so as to be sure that the packing remains dry. The main steam-pipe may be supported by long hangers from the roof of the boiler house, when practicable, or if this cannot be done, it may be held up by posts which rest on the back wall of the boiler setting, or any other convenient place.

By this arrangement it will be seen that the movements of the boilers and the piping itself are compensated for by the spring of the pipes, and no trouble will ever occur. The height of the risers should never be less than three feet, and when there are eight or ten boilers in one battery, they should be, if room permits, six to eight feet high, and the horizontal pipes leading to main steam-pipe should be ten to twelve feet or more.—*The Locomotive.*

A NEW 3,000-BARREL MILL AT TOLEDO, O.

The Nordyke & Marmon Co., Toledo, O., have recently taken the contract for erecting the largest mill in the great state of Ohio. It is for The Toledo Milling Co. and is to have a capacity of 3,000 barrels per 24 hours, and the power to drive it will be furnished by a steam engine. The Nordyke & Marmon Co. drew the plans for the building which is now being erected and also have the contract for its entire machinery, including engine and boilers.

This is a very important enterprise and when one stops to consider that it will do the work of thirty 100-bbl. mills or sixty 50-bbl. mills its effect on the milling interest of Northern Ohio will have a decidedly visible effect although the intention is, we are informed, to grind principally only wheat brought in via the lakes.

THE Jonathan Mills Co., at Columbus, Ohio, have orders for their Mills & Brantingham Wheat Scourers from the following prominent mills: The Yeager Flour Mill Co., Carlinville, Ill., Eckhart & Schwan, Chicago, Ill., Galaxy Mill Co., Minneapolis, Minn., Loughry Bros., Monticello, Ind., Texas Star Milling Co., Galveston, Tex., Commercial Milling Co., Detroit, Mich.

THE Jonathan Mills Manufacturing Co. at Columbus, O., have recently shipped a full line of their Air-Belt Purifiers to the Yaeger Flour Mill Co. at Carlinville, Ill., also a line to the Hoosier State Mills, Indianapolis, Ind., The Commercial Milling Co., Detroit, Mich., E. K. Freed & Co., North Wales, Pa., The Homer Mill & Elevator Co., Homer, Ill., Hardesty Bros., Canal Dover, O., James Wilson & Co., Rochester, N. Y., Perrien & Bro., Detroit, Mich., Galaxy Mill Co., Minneapolis, Minn., Loughry Bros., Monticello, Ind., Strauss, Elston & Co., Marietta, O., Merrit & Arnold, Louisville, Kans., W. A. Clark, Van Wert, O., D. Marmon, of Nordyke & Marmon Co., for his mill at Richmond, Ind.

In the Circuit court October 28, Judge Johnson was hearing arguments in the case of A. C. Richards and others, owners of the Roberts milling patent, against E. P. Allis Company, for an accounting under a contract made in 1884.

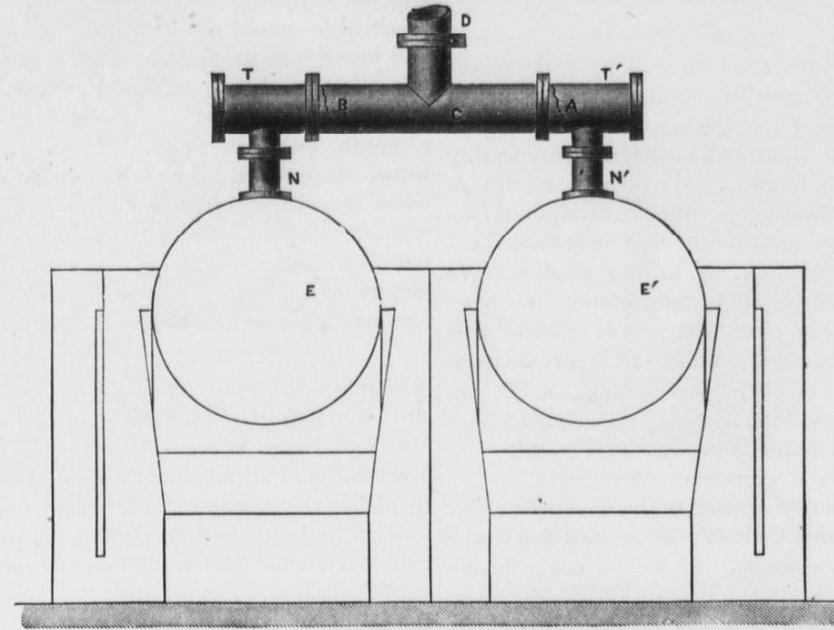


FIG. 1.

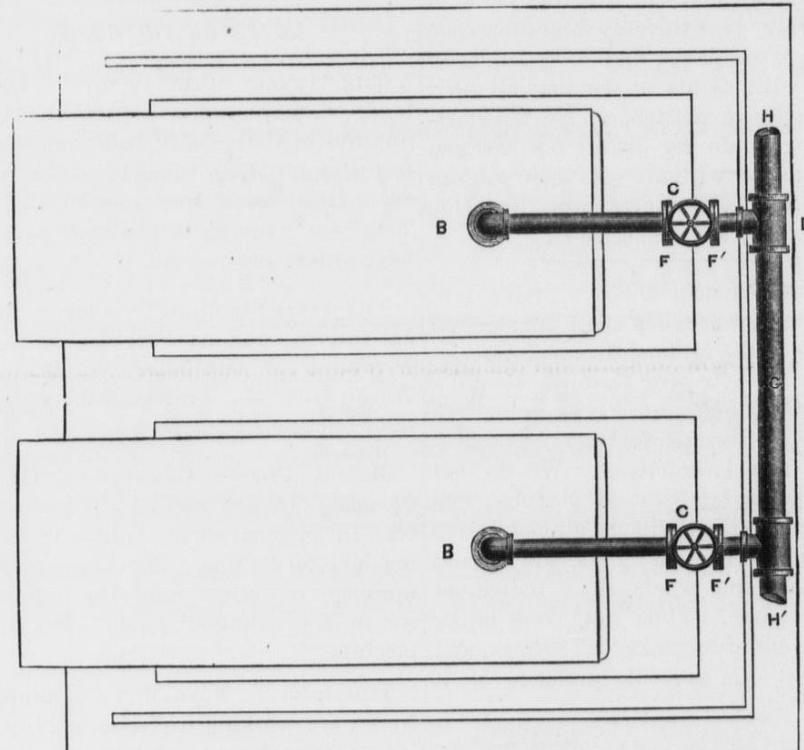


FIG. 2.

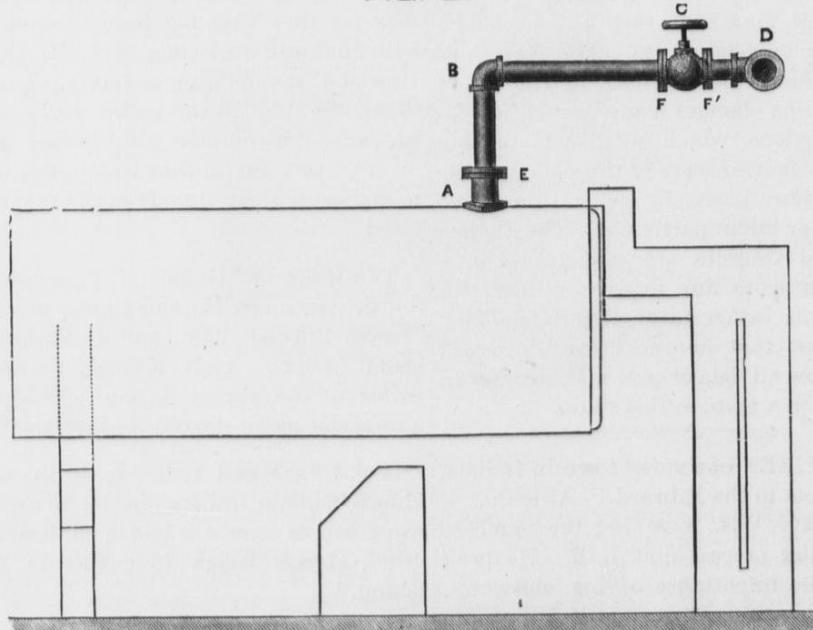


FIG. 3.

to be considered, but which are often neglected, are to provide for the effects of expansion, and also to make allowance for any settling of the boilers which may, and generally does, occur after they have run a short time.

Fig. 1 shows a case where two boilers were improperly connected. Cast-iron tees were bolted to the nozzles, and connected by means of a cast iron pipe which had an outlet on the top, from which the steam pipe was led. It will be seen

Cast-iron pipe should be used with caution for such purposes, as from its brittle nature accidents are likely to occur at any time. Wrought iron pipe is better every way, and should always be used. But in no case can the use of such connections as that shown in Fig. 1 be justified. Only a very inexperienced engineer would design such a connection, and no steam-fitter should put it up without entering a strong protest against it. No provision whatever is made for the motion of the boilers due

CORRESPONDENCE.

[The following letters are all from our own special correspondents, and reflect their views and the views of the trade in the location from which they write.]

MILWAUKEE REVIEW.

THE wheat market has gone down in sympathy with railway and other stocks, among which there has been a great commotion. It is the purpose of the UNITED STATES MILLER AND MILLING ENGINEER to truthfully hold before its reader every influence that tends to raise and lower the price of the staff of life.

It is well known that capital, (money), is the most sensitive thing on earth, often taking fright and hiding away at a mere shadow, and taking to itself wings and flying at the possible approach of danger. To assign political reasons for the present state of the markets may seem to some far fetched, but if any of our readers doubt the truth of the statement, let them sit down and honestly analyze the condition of things, in the light of late national transactions.

At the very moment that European capitalists were looking our country over with a view of investing their capital and sending to us their skilled laborers, our people, under a delusion, either failed to do their duty or deliberately voted to derange and upset financial legislation. Mark the result. No sooner had the political change been announced than these same European capitalists, that the day before stood with cash in hand, withdrew all propositions looking to new investments, but, with feverish reckless haste, threw back upon our hands, for sake of realizing at once, such immense blocks of railroad and other securities that it amounted almost to a panic.

The little ballot which our people threw into the great financial ocean, created a mighty tidal wave that has rolled over the great cities of the world, and will break with the usual disastrous results on our wheat fields.

This little straw shows most emphatically and conclusively where the confidence of Europe is centred, so far as it concerns our national affairs. Who shall compute the disaster that has already befallen the commercial world. I am persuaded the half will never be told.

The loss to our farmers in the last ten days is not less than 25 million dollars and this in the face of an urgent European demand, on a stock that is not greatly above our actual needs at home. But this is the least of the calamities. How about the accruing obligation, the interest money that must come and the already overtaxed securities? You can carry these calculations out interminably. When the financial situation is disturbed, it affects the most trifling personal wants as well as the most stupendous enterprise. The extremes and all between. Confidence is the great rock on which the commerce of the world moves in this age. Shake that and you have done much to bring us back to the good old days when our farmers took their wheat in their wagons forty miles to market, sold at 50c per bushel and took thier pay in salt at \$4.00 per bbl., sugar at 12½c per pound and cotton at 15c per yard.

Now, whether or no legislation will be attempted that could further disturb the financial system, the shadow has been luminous and potent. Will we recover? Oh yes. A country like ours can not be kept down long by a mistake, but the great blessing of a cheaper coat, axe or tin cup will not materialize, while taxes and death are certain. So much for the forces that move the market.

Rye, corn, oats and barley have held their own, and flour as before stated is in good demand on export orders at good figures. Patents as well as the lower grades being taken freely. Some large orders are in but new orders are dropping

off on account of the decline in wheat. Eastern buyers are filled up and their markets sluggish. Millstuffs are easier but yet command fair prices, and the mills have had an exceptionally good run for a month, some not even stopping on Sundays or to clean their boilers.

B. Stern & Son, who have come into full possession of the B. Stern Milling Company's Jupiter Mill, by the aid of the new engine noted in last issue, have doubled their capacity and are now turning out 1100 bbls. daily, running full time and Sundays on orders.

The orders on the Gem Milling Co., for "Our Gem" Patent is increasing to such an extent that the owners of the plant are considering the advisability of increasing their capacity; their products enjoy an excellent reputation and will soon compel them to build. Push and square dealing will always win.

The increase of visible supplies in this country will be about half a million bushels, and the increase afloat for Europe increased about one million bushels last week. This is against about three million bushels on sea and land last year same time.

DONALDSON.

OUR BALTIMORE LETTER.

An Important Quandary—Shall Big Millers Sell Direct to Consumers?—Will it Pay the Milling Trade to Dispense with Brokers?—Baltimore Dealers' Opinion on the Subject—The Baltimore Market, etc.—Predictions—Personal Notes.

AT the risk of being called a crank and chronic grumbler we propose to touch briefly on another subject this month which calls for consideration.

And just here permit us to say, before proceeding, that we have no grudge of any description against the milling fraternity, as some may imagine, but, on the contrary, being closely allied with it, have its interests deeply at heart, and aim only to be of service to it by thus pointing out from time to time, in our humble way, the sins of omission and commission which we see committed and which, from our standpoint, impede its progress and welfare.

If in doing this we appear severe at times it is with no intention to wound or displease but purely to emphasize our meaning and carry conviction.

"We are not half as bad as we seem", and hope, therefore, that in the future a more liberal and charitable construction may be put upon our remarks than has been the case in the past.

After we have finished finding fault with the mills we shall endeavor to make good the adage that "he who laughs best laughs last", by turning our attention again to the peculiarities, inconsistencies and improprieties of the trade at this end of the line.

We pass now to our subject:

We are living in a rapid age and the whirligig of time is developing some wonderful transformations, but notwithstanding all that, is it politic at this juncture for mill and consumer to come together? that is the question. Everything is tending that way, but is the time ripe, and are we ready, for the change?

One barrier after another towards this consummation has been hewn down until now nothing remains between the two except a partition of flimsy gauze and that, too, of pretense more than reality.

In instances this last impediment even has been torn away and mill and consumer have been seen standing face to face. A coincidence worthy of note, however, is, that it is the two largest milling concerns of the country that have taken the initiative in this respect, and New York city, the metropolis of the nation, their chosen battle ground.

One of them tried it here, but it wouldn't work and never will it either while there are other mills in the country and the cash of our jobber's holds out to compete.

We see this tendency everywhere, in all branches of trade, the big fish swallowing up the little fish, and its continuity means centralization and aggregation of capital and capacity and death in the end to competitors outside the fold.

The fight of the future, then, is going to be between concerns like Pillsbury's and Washburn's on the one hand, which are after the consumer, and jobbers, who enjoy that field now, backed by mills that are satisfied with present distribution, on the other.

It is safe to say that it will be an interesting fight, too.

Here, in Baltimore, the lines have been drawn very distinctly already and the result is that no mill can do any business with our jobbers that directly and indirectly caters for the retail trade.

We recognize the right of a mill to sell its product where and to whom it pleases, but we deny its presumption to expect patronage from a class whose customers also it seeks to monopolize. In other words, the trade here doesn't propose to encourage any concern that would deliberately take the bread and butter out of its mouth in that fashion. Happily for all concerned, however, no great harm has thus far been wrought by these invasions of the giants, but the leaven is working, nevertheless, and sooner or later every mill will have to face this vexed question and define its position openly, whether on the side of the wholesaler or retailer. There will be no middle-ground then; no opportunity to carry water on both shoulders, but an emphatic requirement to choose either one avenue or the other, but not both, in which to market your product exclusively.

We see how things are drifting, and the attitude of dealers on the subject, and while we apprehend no immediate conflict, we deem it well for mills to have the facts before them to ponder over and consider, lest they should act hastily, and thoughtlessly in the matter. There is but one alternative for the go-betweens, if mills and consumers come together, and that is to find some other employment, which they all realize, fully, and rather than make the sacrifice they propose to fight the scheme to its bitterest end.

Probably we shall not be thanked for agitating the subject, but that makes no difference to us, as we do much in this world for which we get no thanks, so we think it best in this case to come out open and aboveboard and have an understanding first as last.

The gauntlet has been thrown down in New York, and Baltimore dealers answer the challenge by giving timely warning that they will ostracize any and every mill that comes to this market and attempts to sell to the retail trade. Many have tried it before but have left sadder but wiser men.

We claim down here that a mill must do either a retail or wholesale business exclusively, in the same town at least, and to presume to do both is going beyond its jurisdiction and will not be countenanced for a single moment.

Strange to say, the mills that have adopted this procedure are those of the largest capacity, but if they meet with no more encouragement elsewhere than here it is a mystery indeed what becomes of their output.

Probably they export it and get 50c to \$1.00 a barrel less for it than their competitors that practice different methods on this side of the water. One would suppose that these concerns would be above such picayunish business, would play for higher game and confine their efforts to the better element of the trade. The reverse, however, is their policy, and instead of living and let live they are lopping off here, there and everywhere and pressing their way into our very alleys for recognition.

We desire, therefore, in conclusion, to go on record as being opposed to the system and also to give notice that Balti-

more dealers intend to boycott every mill that indulges in the practice, or that resorts to tactics which shall in any way, shape or form, interfere with their prescribed territory, province or limits.

* * *

The Baltimore flour market during the past month has ruled dull, weak and lower, as has been the case everywhere else, and at this writing is in a somewhat demoralized state owing to the depression in cereal values and the fact that dealers have anticipated largely at higher prices.

The collapse has taken everybody by surprise, and as it was precipitated by a stringency in the money markets, many have lost faith in an improvement until relief is procured, which they fear will not be the case now, to any marked degree, before the first of the year.

The stock of flour here Nov. 1st, exclusive of that held by city mills, was 61,673 barrels, against 55,090 barrels same date a month ago and 66,638 barrels Nov. 1st, 1889.

This increase shows to what extent our dealers have been buying ahead, and yet supplies are considerably below those of a year ago.

While confidence has been temporarily shaken generally, those with whom we have talked believe ultimately in higher prices, nevertheless. It is quite natural to have a big reaction after going through a period of awful inflation. We need such a simmering down to get our bearings and second breath for what is to come after. All will come right in the end however, when supply and demand assert themselves. It is hard to tell just what flour will bring here at the moment, so depleted has the market become of buyers.

No one will entertain anything at any price while things remain so unsettled and depressed, and the consequence is that we are obliged to surmise and approximate values for our readers.

It is well to state right here that while most mills are anxious sellers we fail to note, however, any disposition on their part to force sales below market rates.

The rule on such declines is to sell regardless of price but this has been an exception.

Particularly has this been the case with mills in the Northwest, where the movement is heaviest, and the only reason we can give for it is that they have probably sold wheat short instead and are satisfied to go slow on flour. Happily for this market if such is the fact and that there is no pressure to sell.

Minneapolis patents, and springs from other points, which, a month ago ranged from \$5.40@\$5.80 in wood, are offered now at \$5.15@\$5.50. Dakota patents in jute range from \$5.00@\$5.20. A decline of 20cts.

Spring bakers' including new and old, are quoted at \$4.25@\$4.50 but find few buyers at those figures.

Ohio, Indiana and Illinois patents, straights and clears range nominally and respectively as follows: \$5.10@\$5.35, \$4.75@\$5.00 and \$4.50@\$4.75.

It is well to observe how narrow the range of Winters is becoming, and how closely the good, bad and indifferent are bunching together. Low grades are lower also, but continue relatively scarce. City mills have had a fair trade only in Rio extras at \$5.10@\$5.25, but report a good demand for home account. Their output for the month of October was 42,000 barrels. One of the mills has shut down temporarily for want of orders.

Nothing of moment has been done in supers for the West Indies. Clearances of flour for the month have been above the average. We quote the nominal range of the market in detail as follows:

Western Winter wheat Super.....	\$3 00@3 50
Western Winter wheat Extra.....	3 75@4 25
Western Winter wheat Family.....	4 50@5 00
Winter wheat Patent.....	5 15@5 35
Spring wheat Patent.....	4 75@5 00
Spring wheat Straight.....	4 25@4 50
Spring wheat Baker's.....	—
Baltimore Best Patent.....	—@6 10
Baltimore Choice Patent.....	—@5 95
Baltimore High Grade Family.....	—@5 85

Baltimore Choice Grade Extra.....	—@5 60
Maryland, Virginia and Penn. Super.....	3 00@3 50
Maryland, Virginia and Penn. Extra.....	3 75@4 25
Maryland, Virginia and Penn. Family.....	4 50@5 00
City Mills Super.....	5 10@5 25
Rio Extra	3 50@4 00
Rye Flour.....	3 50@3 65
Hominy.....	3 50@3 65
Hominy Grits	3 50@3 65
Corn Meal, per 100 lbs.....	1 25@1 50
Buckwheat, " " new.....	2 30@2 40

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The wheat market here has ruled dull, weak and lower, also, in sympathy with outside influences, and at this writing shows a loss of 5 cents on cash, 6½ cents on December, and 3 cents on May, in comparison with our figures of a month ago.

As will be observed the cash and approaching option have suffered the most, the result of tight money, while May has been the center of attraction and held its own relatively the best.

Receipts have been small, on the whole clearances practically nothing, excepting a few boat loads for account New York millers, and stocks in store show an increase of about 40,000 bushels for the month.

We have had no export business to speak of since our last review, but values are on a workable basis at present and considerable could be done were freight room available, but in its absence we are confronted with another obstacle. No one could foresee or foretell the panic in stocks and the general uneasiness in moneyed circles, which precipitated the decline in cereal values. It came like a clap of thunder out of a clear sky and caught everybody prepared for a rise instead of a fall.

There were too many bulls, and of that stamp, too, who were bears last spring, at the bottom, and the consequence was that they had to be shaken out and converted to the other side before there was the slightest chance for any material improvement.

We should take off our hats to the St. Louis "art club" for it has been dead right on the deal both going and coming.

The movement in the northwest is larger and continues longer than most people expected, and, with the weekly increases in both visible and amount afloat, helps to throw cold water on the bulls.

That scrip canard had its effect, too, and did its work well by making the longs unload their burdens from way back.

The markets after this pumping out will be healthier than ever, and are apt to react quickly and when least expected.

Some say that the break in prices was caused by Republicans who wanted to give the Farmers' Alliance a taste of "free trade," all of which is rot of the rankest sort.

We may expect some improvement from these prices, since the lakes have closed and movement has retarded, but we look for no sky-rocket boom now until after the first of the year, when money promises to be easier.

Wheat is a safe investment for a long pull, but while we predict a spurt in prices before Christmas, we see no big thing in it until after then.

Stock of wheat in Baltimore to-day is 966,620 bushels.

CLOSING AND COMPARATIVE PRICES.

Wheat No. 2 red.	Closing to-day.	Same time last year.
Spot.....	93 @ 93½	80 @ 80½
Steamer 2.	—@ —	73 @ —
Fultz.....	91 @ 98	73 @ 88
Longberry.....	93 @ 98	74 @ 84
November.....	93 @ 93½	80 @ 80½
December.....	94½ @ 94½	81½ @ 81½
January.....	96½ @ 96½	82½ @ 82½
May.....	103½ @ 103½	88 @ —

**

The movement of corn this year is unprecedentedly backward, hence our inability to report much on that subject.

Cash and the year are 3 cents higher than our figures of a month ago, while May remains unchanged. Such prices should certainly bring the stuff out, and this is likely to occur, too, now that values are beginning to recede.

Speculation here sees no good in corn

at present prices. Receipts, clearances and stocks are all light.

Export demand for the cereal has played out.

Good consumptive inquiry at home but nothing more.

The "boys" here refer to corn everywhere as "Hutch's securities" he being thought to own the bulk of it.

Stock of corn in Baltimore to-day is 71,887 bus.

CORN Mixed.	CLOSING TO-DAY.	SAME TIME LAST YEAR.
Spot mixed.....	58 @ —	41½ @ 41½
Steamer mixed.....	—@ —	—@ —
South white.....	63 @ —	41 @ 44
South yellow.....	64 @ —	40 @ 42½
November.....	58 @ —	41½ @ 41½
Year.....	56 @ 56½	39½ @ 39%
January.....	55½ @ —	39½ @ 39%
May.....	57½ @ 57½	—@ —

ITEMS OF INTEREST TO THE TRADE.

A. R. James, President of the Millers' National Association, paid Baltimore a brief visit recently.

James H. Knowles, of Boston, and D. W. Carhart, of New York, the former representing the La Grange mill at Red Wing, Minn., and the latter the Daisy Roller mill at Milwaukee, were here during the month soliciting trade.

Jas. H. Gambrill, miller of Frederick, Md., was on 'Change this week talking bullish.

Mr. Simmons, Freeman's agent, was here on Wednesday in search of orders.

Louis Müller, ex-President of the Corn and Flour Exchange, who accidentally shot himself recently, is able to attend to business again.

H. A. Lederer, junior partner in the flour commission firm of S. P. Thompson & Co., enters the blissful state of matrimony next week.

E. T. Rinehart, of Rinehart, Childs & Co., who has been confined to his house by sickness, is able to be about again.

The Baltimore correspondent of the *Northwestern Miller* has this to say in his last letter to that journal: "The railroad companies have now decided to grant some concessions on flour, giving 10 days free storage on all arrivals at Spear's wharf and Patterson street, day of arrival, holidays and Sundays not included. Storage is to be at the rate of 3c per bbl for the first 30 days or part thereof and afterward at 2c per bbl for each 15 days or part of that period. At all other stations the charges remain as follows: Six days free, storage then to be same as at warehouses; railroad companies to reserve privilege of sending flour to private warehouses: owners to pay charges following. From these concessions it would appear that the agitation of your correspondent and others is having its effect.

"We saw a letter from a northwestern mill this week which said: 'We are advised that the lake lines will take no more flour for the Baltimore road.' Your correspondent forthwith called on a prominent official of the road in regard to the matter and was told that, owing to the great scarcity of cars, the Baltimore & Ohio was wholly unable to handle the traffic everywhere pressing upon it, and had therefore concluded to withdraw entirely from that coming by the way of the lakes. This frank confession accounts for the present delays of stuff in transit, and leaves the Pennsylvania road in control of the field, a fact not at all relished by the trade here, as it means that it will be hard indeed to tell now, even approximately, when invoices are going to arrive, and also that shipments made hereafter by lake and destined for Baltimore must needs come by that route or not at all.

ORIOLE.

BALTIMORE, Nov. 16th, 1890.

OUR BUFFALO LETTER.

The Market—The Wells Elevator Fire—Local Notes—Politics The Niagara Falls Tunnel—Car Service Charges—A South American on 'Change—An Interesting Interview.

THE flour market has been dull during the past two weeks, but millers have as a rule secured enough orders to keep them going for the rest of the year, and some of them longer. Prices are lower for the Eastern trade; \$5.75 for the best patent springs and \$4.85 for winters are as near the fig-

ures as it is possible for an outsider to get.

Mr. C. F. Prentice, of Le Roy, N. Y., was on 'change during the break in wheat last Friday looking for a supply of good old hard wheat. As Mr. S. A. Simons always makes the choice of cargoes for him, there is no doubt it is the best wheat in this market for sale. Mr. Prentice has the finest water power and one of the best 250 bbl. mills in the state. Like Mr. Simons, he is a close buyer and by careful attention to business has accumulated a fortune. His shrewd management of salt wells in the vicinity of Le Roy has also resulted in making that business a great success.

David Carey, who built up quite a little village, named Carey's Mills, a few miles from Le Roy, died last month. He had been a miller for over 50 years.

Mr. William Learn, whose mill at Humphrey Center, was destroyed by fire some time since, is making arrangements to rebuild. The new mill will be of larger capacity.

E. P. Durant of Durant & Co., Albany, one of the oldest and straightest firms in that old Dutch hamlet, was in town a week ago looking for corn.

The C. J. Wells elevator burned Thursday morning, Nov. 6th. Although the origin of the fire is supposed to be a mystery, there is no doubt that it caught from the boiler room and worked up the inside elevator leg to the top story causing an explosion. The elevator was running up to 11 o'clock unloading grain, and the first known of the fire was about 2 o'clock in the morning. There were nearly 290,000 bushels in store on Wednesday, but only the following lots remained, all well insured: C. H. Warfield, 32,000 corn; T. J. O'Brien, 16,000 corn; Waters & Seymour, 2,100 corn; N. C. Simons & Co., 27,000 barley. Loss on grain and building will not amount to more than \$175,000. An unusual number of wet-grain buyers arrived in the city soon as possible, and bidding commenced on Saturday, resulting in the sale of the grain at \$17,500. The elevator will be rebuilt unless the Lackawanna road which has been looking for this property for some time, takes it immediately.

The new firm of bankers and brokers, Messrs. Demary, Heintz & Lyman, are working up a good trade at No. 11 Board of Trade. Counselman & Day and Kennett, Hopkins & Co., Chicago and New York are their correspondents. There is room for this new firm in this city, especially as it has a good backing. With two "bucket shops" and only A. J. Wright & Co. legitimate trading in options was on the wane.

The Wright-Matthews case which was postponed for one month to accommodate the lawyers will be called about the 20th inst. Still there are many who predict that it will never come off for the reason that the testimony gathered by Messrs. Matthews and A. R. James when the matter was before the Reference Committee of the exchange, will be too much for the Wrights. Besides, what a beautiful witness the senior broker will make for the millers! Full stenographic reports of the case will be printed in the daily papers, and everybody here is anxiously waiting to read them. The case will settle some fine points in the grain trade, also at the same time prove "who is a —."

The new owner of the mill at East Aurora, N. Y., Mr. A. R. Bois, has repaired the dam and will soon have the wheels revolving again. Mr. Bois is sure to succeed, his friends say.

Mr. Alexander Mann has become quite a classical Bostonian, judging from his letters. If he would only change the color of his paper, place his lines half an inch instead of 1 inch apart and not speak of his "growing love for Boston," his friends here would rest easier concerning his mental condition. "Clint" Newman is greatly worried, having inquired twice

within a week as to his health, present address, etc.

Mr. F. J. Henry of the firm of Harvey & Henry, was confined to his home for 10 days with a severe cold. He was out last week looking fairly well. His physician has prescribed a trip to Boston for a month.

The Imperial Mills of Duluth have quite a large supply of flour stored here for their eastern flour trade this winter. Next year a large warehouse will be built for this enterprising firm on the Tiffit farm docks. Mr. Strickler is at present introducing their best brands in the larger towns outside of Buffalo, and meeting with success considering the sharp competition from representatives of Buffalo mills.

The new Thompson mill at Lockport, started up the first of the month running to its full capacity, 500 bbls. daily. It was built by Wm. J. Blackley and equipped by the E. P. Allis Co., of Milwaukee, under the supervision of J. E. Case of that company. It is pronounced one of the most complete mills in the country.

Standing on the canal, it fronts on a high bluff, thus being convenient for both land and water traffic. It is equipped with 15 double sets of the Gray patent noiseless roller mills, with Bowsher speed indicators, these being situated on the third floor. On this floor are also a hopper for weighing grain from wagons and a water tank for lubricating the water wheel steps. There are four Reliance flour packers and two improved Eureka feed packers. All conveyors are of iron, as a provision against fire. The fourth and fifth floors have the full equipment of bolts and purifiers, including 4 of the latter, 2 scalping reels, 14 Gray patent centrifugal reels, and 5 Cyclone dust catchers on the fourth floor, and on the fifth, 6 purifiers, 6 Cyclone dust catchers, 2 double scalping reels, 16 Gray flour dressers. This floor is connected with the shipping floor by a chain reel for elevating barrels and sacks of flour. The grain before grinding is passed successively through a Richmond separator, a Eureka magnetic separator, a third separator, a No. 6 Richmond scourer and polisher, and finally, through a Richmond separator, whence it goes to the hopper. The storage capacity is 50,000 bus. wheat and 20,000 bbls. flour. The mill has Edison electric lights and steam heat. The company is organized as follows: President, Geo. B. Thompson; vice president, W. H. Draper; treasurer and general manager, E. M. Grigg, secretary, H. M. Witbeck. J. C. Ellis, formerly of Niagara Falls, has been hired as head miller. Two leading brands of flour will be made—"The Angelus" from hard wheat and "Pride of Niagara" from winter wheat. The lithograph for the former will reproduce Millet's famous painting.

It is simply delicious to see the democrats on 'change congratulating each other on the sweeping victory. Banker Sandrock was first on the floor. He was soon followed by Mr. Charles G. Curtiss. George raised his shining tile in true Parisian style and clasping the hand of Curtiss said, "Oh Charley!" Charley's heart was full and he could only answer, "Oh George!" Then came forth from his den the ancient secretary who could only exclaim, "Oh George, Oh Charley!" Shipchandler Baker, Wm. Meadows, Augustus Scheu the maltster, Charles Warfield, S. W. Yantis, Frederick Truscott, all joined the group, and hand-shaking with the accompanying "Ohs" continued for fully half an hour. The crowd of republicans looked on, pictures of disgust, occasionally remarking, "how silly," "isn't that foolish," etc. The boys did not mind this in the least however, and would have offered their condolence, but they well knew it was entirely out of place in the light of such a disastrous flood.

City elevator B, capacity 800,000 bushels is in working order. With the additional facilities for elevating and loading cars (and with the New York Central to fur-

nish the cars to this elevator in preference to others on the creek) there is no doubt of its being kept busy.

Stedman, Vickery & Co., West Avenue feed mills at Attica, and Mr. Charles J. Bork, owner of the Attica Mills are having quite a serious time over the feed trade in that small hamlet. The former are confident of wiping Mr. Bork from the face of this business, as they claim they did Messrs. Blaine and Eldred, former managers of the Attica mills. The war thus far has been confined to the *Attica News*. Mr. Bork has a little the most money and it behooves Messrs. S. V. & Co. to go slow lest they arouse some of the miller's German blood.

H. H. Eldred who figured so notoriously in connection with the management of the Attica mills has evidently struck it rich again. Not more than a month ago he looked a fine specimen of the "shabby genteel," to-day he is like a lily. It is said he is agent for the Attica mills, but as he owns the electric light plant in the village, it is more than likely that his business is connected with that branch of mill.

Prof. Pohlman read a paper before the society of natural sciences in this city in which he claims that the water and frost will dissolve the calcareous parts of the shale, through which the Niagara Falls tunnel will pass, causing the sides to cave in. In his opinion the walls must be lined with either brick or iron. Still the work goes on in spite of this worthy Professor's ideas.

The question of car service charges has been long a bone of contention with the members of the Exchange. How to get rid of this burdensome and unjust levy upon the trade here has at last forced receivers to cry out against the railroads. It is well known that heavy receivers of coal and other freight sent here for transhipment, refuse to pay these charges, claiming that when a car is unloaded in six hours, they should be credited with the 32 hours out of the forty-eight allowed. They court an action against them, defying the railroads in every instance to come on and claim one penny for car service. As far as the grain trade is concerned this little game cannot be worked, as there was, to tell the truth, too much petty jealousy among the receivers, both large and small. It has, however, dawned out on the merchants that some concert of action was a necessity, and hence the following resolutions passed a week ago:

Whereas, The rates charged by the railroads on the grain and produce business of this Exchange and city being in excess of proportionate rates charged in competitive business between contemporaneous markets west of Buffalo, and points east of Buffalo, and such excess said to be added for alleged terminal expenses in making delivery at Buffalo, or reshipping thence to Eastern points; and

Whereas, The alleged terminal or delivery expenses at Buffalo having already been provided for in the rates charged by the railroads on the business of this Exchange and city; and

Whereas, Buffalo being a large distributing market from which fully 75 per cent of the rail receipts pass forward without delay;

And whereas, Fully as great or greater delay is made by the railroads, on shipments from the West, in transporting the business, as ever occur after reaching this market, and for such delays the trade having no recourse upon the railroads, therefore

Be it resolved, That this Exchange deem and declare that further charges added at Buffalo by the railroads in addition to their rates charged for transportation on account of car service, so called, is unjustifiable, and constitutes a burdensome tax on the trade of this Exchange and city, and this Exchange do protest against the same.

At the same meeting a communication was received from W. R. McNiven, offering to furnish the Chicago quotations on grain and provisions to the Exchange free and also an operator, if the board would grant him permission to solicit business for members on the floor. The offer was accepted. This is just like the Buffalo Ex-

change; instead of trying to get the quotations from the Chicago board for itself (and it could be done), the picayune policy must be adopted. The above source of reliable quotations has always been regarded as a "bucket shop" and not a member of the Exchange would be found near the stairway leading to it. Still "it is offered for nothing." What an argument for such important daily quotations as the Chicago market. It is safe to say the whole thing will be squelched when the boys find that the "official" figures received come by the way of the "Pacific Coast" and are positively of no value.

Canal freights went all to pieces November 12th. Boatmen were anxious to get one more load and reach New York before December 1st, when the canals close for the season. Wheat was taken at 2½ and 3½, and corn at 2½ and 3; the association getting the outside and individual boatmen the inside figures. Regarding the association next year, it is doubtful if one can be formed. Too many cooks in this one ruined the chances for next year. Joe. Harcock, the Duke of Mencachie, Capt. De Puy, blatherskite Clark and Joe's lieutenant should be pensioned before the first move is made to combine next year.

Parsons & Co., Batavia, N. Y., are rushed with orders, and although the capacity of their mill was doubled, an order for fifty car loads of flour was refused this week, the firm being unable to furnish it before the latter part of next month. A good straight winter flour is being made, which takes well in the East.

The receipts of flour this year by lake will foot up something enormous. Up to date 5,200,000 bbls. have been received against 4,100,000 last year. The railroad freight houses now contain about 150,000 bbls., and with several full cargos to come this amount will be increased to 225,000 bbls. The bulk will be kept here for the eastern trade this winter. Next year it is the intention of some of the large Duluth millers to build store-houses of their own at different convenient points along the river.

Mr. George Urban, Jr., introduced on change, the first of this month, Mr. Frederick Wildermuth, his guest from South America. All the notable strangers are put under the tender guidance of this genial gentleman by common consent and it goes without saying that they are always well taken care of.

Frederick Wildermuth is a remarkably intelligent and well informed man, hailing from Rosario, in the Province of Santa Fe, Argentine Republic, South America. He is a capitalist, a miller and a dealer in milling and agricultural implements.

Within a comparatively short time he has bought eighteen flouting mills complete, transported them to South America, put them up and set them in operation. Three of these were bought from the Noye Manufacturing Company of Buffalo, and fifteen from E. P. Allis Co., Milwaukee.

Your correspondent is indebted to Mr. Urban for a half hour's very interesting and instructive chat with this gentleman.

"What is your judgment as to the possibility of building up a trade between this country and the Argentine Republic and other South American countries?" was asked.

"Oh, easy to be done," exclaimed Mr. Wildermuth in broken English, and holding up both hands as evidence of how earnestly he felt upon the subject. "Much trade and good trade," he said. "Our people prefer American machinery, locomotives and cars, furniture, carriages, tools, silver ware, and plated ware, stoves, agricultural implements and foundry products and lumber."

"Well, if you prefer these articles of American make, why don't you buy them?"

"We do much. Nearly all of our railroad locomotives are bought here. All of our passenger cars, much milling machinery, carriages, tools, stoves, etc., come from here, but it is so hard to get them."

"How is that? Our people are glad to sell and they will make all you want."

"No transport; no ships," was the response, accompanied by a violent shake of the head.

In progress of the conversation it was found that South American buyers have the greatest difficulty in getting to and from this country, and in securing transportation for their purchases. Mr. Wildermuth had to take passage for Europe in order to get here, and unless the consignment is a very large one the safest and quickest way is to ship via Liverpool, England, and then the freight money frequently amounts to as much as the goods originally cost. The only way business can be done to advantage with this country is to buy a ship-load at a time and charter a vessel for the voyage.

When discussing this phase of the subject Mr. Wildermuth became excited, exclaiming, "Oh, if America would only give us the steamship lines like Europe does, much business could be done!"

It appears that at the port of Buenos Ayres, a city of half a million population an English steamer arrives every day; while Germany has two regular lines, France three and Italy two, and not a single line from this country. The result is that the South Americans by the force of circumstances are obliged to give Europe their ordinary trade.

When asked to explain why American machinery was preferred to any other, Mr. Wildermuth said:

"You see we have no lumber for machinery and no manufactories to speak of in our country, so that when an expensive piece of machinery breaks down it is a serious matter. Instead of sending to the next corner for a mechanic to make the repairs, or sending a few miles away for a new piece, involving a delay of a day or two, we have to wait until a letter can be sent to the maker here, which must go by the way of England and the new piece returned by the same route, which means a stoppage of from three to six months. Your wood is stronger and better than that used in Europe, and as a rule it is better put together, so that it lasts longer, and that is the reason we prefer it. For this reason, and notwithstanding all of the impediments in the way of doing business with this country, all of our newest and best mill machinery, three-quarters of all the reapers, and a large percentage of the threshers used in the Argentine Republic, come from the United States. Some of the threshers come from the Pitts Agricultural Works, Buffalo, but many more come from Case's at Racine, Wis."

Mr. Wildermuth related an incident showing how trade might be developed if facilities for communication between the two countries were better. Either he or his brother have visited this country every year for a long time. Six years ago his brother was riding in Mr. Urban's buggy about the city. Mr. Wildermuth liked the vehicle so well that he ordered one and sent it to his home in Rosario.

It gave such good satisfaction that they have ordered more or less every year since. He says that one of our buggies will be in good condition when one of English make, seeing the same service, will be all to pieces.

Mr. Wildermuth cited another evidence going to show how the business is developing between the two countries. When his firm started they handled only flour-mill machinery. Now they are handling all sorts of agricultural implements as well, and he is now figuring on the machinery for a large starch factory.

"Yes," said he in conclusion, "the business with this country is developing, but only give us good transportation facilities between North and South America, and we will give this country the cream of our business. That it is worth looking after is shown by the fact that Lampert & Hull, an English firm, are now operating a line between New York and Rio, Brazil."

Regarding the stock of grain at this point the figures furnished by the elevating association do not include that checked out for shipment by rail. The amount posted is about 4,000,000 when in fact we have over 7,000,000 bus. in store. How can the visible supply be of any use to speculators, or anyone else for that matter with such a discrepancy.

Mr. Edmond J. Newman died in this city two weeks ago, aged 73 years. He was born in Pompey, near Syracuse, in this state, in 1817. He was a miller some years ago but was principally interested in the large cement works at Akron, N. Y.

The Arcade mill, situated in this county, has been sold to W. H. Wilson & Son.

At the meeting of the Exchange trustees, November 13th, Mr. Wm. O. Elmore, of Albany, Barton Atkins and Andrew J. Demary, of Buffalo, were elected members.

BUFFALO.

BUFFALO, N. Y., Nov. 17th, 1890.

OUR LONDON LETTER.

English Crops and Markets — English Seed Wheats — A New Middling Purifier — Shipping Affairs — The Bread Union — How Shareholders were Victimized — Peculiar Mild Weather.

 N account of ill-health your correspondent has been unable to forward the customary London letter, but he is now pleased to report a great improvement in trade in the United Kingdom since the last letter was sent, and, as was remarked on the Liverpool Corn Exchange, on Tuesday last, the English are producing more flour than they have done for the past ten years. This means that there will be a keener competition among the millers on this side, which will, by that means, lessen the price of flour to such an extent that it will not be very profitable to buy wheat here and mill it into flour. The result of this will be that more American flour will be required by the English miller to mix into his own flour so as to give it "body" on account of the high price of foreign wheat and the low price of flour.

Sir John Lawes takes an optimistic view of the English wheat crop of 1890, and his own farming justifies his expectation, that the whole of the United Kingdom has grown 37 bushels to the acre. Assuming this to be too much, Sir John still reckons the crop at 31½ bushels. According to these figures, 18,000,000 quarters or more of imported breadstuffs will be required this cereal year. Thus the strength of the statistical position tells in spite of the adverse circumstances, including the fall in the exchange values of the Russian rouble and the Indian rupee. Receipts of grain and flour during the first month of the cereal year are given as follows:

ONE MONTH'S GRAIN AND FLOUR IMPORTS.		
	1888.	1889.
Wheat	Qrs 1,378,579	1,327,590
Flour, as wheat	440,694	393,095
Total, as wheat	Qrs 1,819,275	1,720,685
		1,736,428
		367,087
		2,103,515

The heaviest supplies of wheat during the month of September were from Russia, Roumania standing next, and considerably ahead of the United States in quantity. Indeed, India—although the surplus there is a small one—sent Great Britain nearly as much in September as we received from the Atlantic and Pacific ports of America together. The following table will give the readers of THE UNITED STATES MILLER some idea of the prices that wheat was selling at in Mark Lane yesterday:

English wheat:-	Per qr.
New White Kent or Essex.....	36s. @37s.
Old Red Kent or Essex.....	31s. 6d. @35s. 6d.
Old English White.....	36s. 6d. @41s.
Old English Red.....	34s. 6d. @38s. 6d.
White Norfolk.....	35s. @36s. 6d.
Red Norfolk.....	31s. @33s. 6d.

Foreign wheat per quarter of 496 lbs.:—	
American:—	
Duluth	40s. 6d. @41s. 6d.
No 2 Spring	37s. @38s.
Red Winter wheat.....	37s. @38s.
California and Oregon.....	37s. @38s.
California and Oregon Red.....	36s. @37s.
Canadian.....	37s. @38s.

Australian	37s. 6d. @40s.
New Zealand.....	36s. 6d. @38s.
Bombay Red	32s. 6d. @33s.
Bombay White	34s. @37s.
Calcutta White.....	34s. @36s.
Calcutta Red.....	31s. 6d. @33s.
Karachi.....	32s. @34s.
Persian	30s. @37s.
Dantzic.....	30s. @40s.
Danubian and Roumanian.....	33s. @35s.
Konigsberg, Rostock, etc.....	30s. @39s.
Hungarian.....	35s. @38s.
Azilia.....	33s. @36s.
Petersburg.....	33s. @35s.
Saxonska.....	36s. @38s.
Sebastopol.....	35s. @37s.
Odessa, Ghirka.....	33s. @36s.
Taganrog.....	33s. @36s.
Kubanpa.....	34s. @36s.

There has been recently on Mark Lane some flour from the Argentine Republic, which was sold "off stand" at 21s. 3d. per sack of 280 lbs. It was of a very low class, and was not to be compared with some of the low grades of American, which are sent to London.

The potato crop to a certain extent has an effect on the price of flour, as when it turns out badly there is a greater demand for bread, and it may not, therefore, be out of place to give a few particulars of this commodity. Potatoes are largely grown in Lincolnshire because of the peculiar fitness of the alluvial and peaty fen soils for them, and in the Midland counties, especially near the centers of dense population, which ensures a near and ready market. In the Midland counties the crop has been gathered in, and the result is most satisfactory, there being only a slight proportion of diseased tubers. In the East Lothians the crop is described as being a magnificent one; but in some other parts of Scotland results are not so favorable, there being more or less disease, according to the varieties of potatoes grown. The blight affected some varieties far more than others, which should be a lesson for the future to plant only those which have the best reputations as disease resisters. According to the Glasgow papers, there have been large importations of potatoes from Yorkshire at that port recently, and one cargo has actually arrived there from Ireland, which seems remarkably strange, considering how confidently it has been predicted that they were on the eve of another potato famine in that country.

The National Association of British and Irish Millers are just now considering the question of "Seed Wheats," and they have issued a circular, which has been extensively circulated among farmers, urging the necessity of taking more care in the selection of seed wheats, and only sowing those varieties that have a good proportion of good gluten instead of those sorts, which are now so extensively grown on account of the great yield per acre, and which are generally very starchy and deficient in gluten.

Since my last letter a new purifier, called the "Kohinoor," has been placed on the market by Messrs. Thomas Robinson & Sons (Limited), engineers of Rochdale. The purifier is the invention of Messrs. Parkinson, millers of Doncaster, who some years since invented a grain-drying machine. In my next letter I will give a few particulars of this machine, as by that time I shall have seen it at work.

The Board of Trade returns for the month of September are very favorable, which may be accounted for by the fact that the great London dock strike was at its height in September last year, and that a rush has been made this year to get manufactures into the United States before the new tariff was put in force. The value of the exports for the month was £22,764,677 as compared with £19,692,615 in September, 1889, an increase of 15.6 per cent. The value for the nine months was £197,459,587, as compared with \$182,626,333 in the first three-quarters of last year. For the month the value of the machinery and millwork was £1,449,560 against £1,198,030, an increase of 21 per cent. The imports for the month amounted to £35,551,688, as compared with £33,406,985 in September, 1889, an

increase of 6.4 per cent. For the nine months ended September the value was £306,625,138, as compared with £310,102,329 in the same period of last year. These figures are most encouraging, but at the present junction merchant shippers and others connected with the import and export of merchandise have to face a very grave situation. The Shipowners' Federation is a fact, and this body, who has centers at various important ports, have in some cases threatened to lay up steamers belonging to its members. Associate ship owners are of opinion that the strength of the Federation and the Sailors' and Firemen's Union, respectively, would be abundantly tested by the laying up of twenty-five per cent. of the steam tonnage of the country. Against this new move on the part of capital, we have had during the past two days a conference of delegates representing the various branches of labor connected with shipping in Great Britain. The drafting of rules for the federation of the trades was completed and a provisional committee was appointed. The rules have yet to be submitted for further revision at a meeting to be held next week, and a final meeting to settle and approve them will be held as early as possible.

One of the most curious revelations in the conducting of a bread company has occurred during the past two weeks, when the shareholders of the Bread Union, limited, "gnawed the hard crust of bitter delusion" at the meeting of that company on the 21st of last month. According to the *Financial Times* "there was not so much as a stale crumb of comfort for seven or eight hundred luckless shareholders who crowded into the meeting place to hear how they themselves, and not the Union's bread, had been cut up in this mysterious business." The proceedings at the meeting disclosed that the Bread Union was formed to take over the businesses of three companies, the London and County Bread Company, The London and Westminster Bread Company and the Metropolitan District Bread Company and certain other shops, from a person of the name of Browne, who was subsequently appointed secretary of the company. In the London and County Company there was a freehold mill at Ashford, which it is believed the owner sold to the nominee for £7,000. This mill was then resold by him to someone else for £9,000, and that person sold it to the company for £18,000. Besides this mill, the London and County Company was to acquire thirty-two shops, and the shops that were bought were passed through the hands of nominees, who resold them to the company at practically double. The next company was the London and Westminster Bread Company, which was bought out in April, 1889, with a nominal capital of £120,000. That company was to take over the Westminster mill and sixty shops, the purchase price being £103,980. The Westminster mills were purchased for £10,000, and sold by the nominee for £20,000—£15,000 in cash and £5,000 remaining on mortgage. The mill has never been worked by the company, and, so far as could be ascertained from inquiry, its value was about £7,000. A shop, 62 Charing Crossroad, was purchased by this company from the owner for £1,500, they agreeing to give him £500 in shares, £500 in cash, leaving £500 on mortgage. It was resold to the Westminster company for £5,000. The same shop was afterward taken over by the Bread Union, but as it did not pay, and was a dead failure, it was resold to the owner for the amount of the mortgage—£500. The Metropolitan District Bread Company was the next. It was bought out in May, 1889, with a nominal capital of £131,000. The subscribed capital, as far as could be made out from the books, was £10,645. The company was formed to acquire seventy-five shops, and the King's Cross mill for £115,606. Again, the prospectus did not disclose the con-

tracts of the original vendors. The prices, however, were again doubled. Although the company was formed to purchase seventy shops and the mill, it only acquired seven. The real purchase money of these shops was £3,750. The Bread Union was formed and a new body of shareholders was found to take over those securities that the promoters still had, and on the 24th of September, 1889, it was formed with a nominal capital of £500,000, with the object of taking over 277 shops and three mills, one of them being the one that was never worked. The allotment was made on the 28th of September, 1889, and the company, instead of taking over 277 shops, only took over 93 or 94, and, with this amount of dead capital, it is not surprising that the company is now in liquidation.

Yesterday on the "Baltic" there was a good deal of speculation as to the judgment that will be delivered in a few days in a case brought before the Railway Commissioners by the Liverpool Corn Trade Association against the London and Northwestern Railway Company, alleging that, owing to there being a considerable reduction in the rates for grain and flour between Cardiff and Birmingham as compared with Liverpool and Birmingham, although the distance from Cardiff was much greater, there was a falling off of business from Liverpool to Birmingham. This the Liverpool Association said was an undue prejudice to them, and a preference to the Cardiff and other traders from the Seven ports, and they therefore asked for an order restraining the Northwestern Company from giving these advantages. The Association case was supported by a large body of evidence from Liverpool and Birmingham to the effect that the trade in grain and flour had fallen off of late years, and they attributed this to the lowness of the Cardiff rates. The Railway Company in the defense said that they were obliged to charge a low rate at Cardiff in order to meet railway and water competition, and that they charged those rates in the public interest. Further, they said, the traffic on their line and by the Shropshire Union Canal proved that, instead of the Liverpool trade falling off, it was annually increasing. Mr. F. Harrison, General Goods Manager of the Northwestern, said the real difficulty of the millers was not with the Cardiff or any other rates. It was with the American miller, who was able to import his flour into the inland towns of England at a lower price—although charged the same railway rate from the port—than the English miller at the port was able to grind and transmit his flour into the English inland towns.

It is a curious circumstance, thoroughly illustrative of British climate, that, though October was on the whole a warm and genial month, it afforded on Tuesday night the lowest temperature registered in October for fifty years. The records of the Royal Observatory yield no other reading so low as 22° within that period.

L. MAYGROVE.
London, Nov. 1, 1890.

OUR ST. LOUIS LETTER.

I CONFESS to have little of news for this month's contribution from St. Louis. Milling circles here have been so quiet of late that no news of much importance is to had. The insurance trouble which Mr. Kauffman's company has had with the Buckeye State Fire Association, has excited some comment and been thoroughly "aired" during the past month.

WHEAT.

The recent financial troubles in New York markets has had its effect on wheat quotations and brought them down to a more reasonable rate for millers and exports. About 200,000 bus. of wheat was taken for export during the last few days by Orthwein Bro., and the barge line; 50,000 bus. were loaded into barges and

shipped down the river, and 15,000 bus. are booked for next week. Quoting from a recent issue of a daily paper:

It was openly stated that exporters were also buying the contract grade for December and would export this wheat if delivered them. Local millers were also free buyers of December and they all, with few exceptions, are bullish on wheat at present prices. As about all the stock here of No. 2 red has been changed over from December to May at present and late differences, 8 $\frac{1}{2}$ to 9c, which allowed paying carrying charges, even with money at 8 per cent, there isn't much probability that wheat will be delivered on December 1, but it is more likely the stock will remain in the hands of the present carriers, the United Elevator Co. Most of the December longs, some of whom had it bought at \$1.07, and even \$1.08, have been shaken out, and so also have a great many of the May longs, the country suffering most severely. Hence, the market now is in better shape than it has been for a long time past, and were only financial affairs in good shape, wheat would be in a safe position to buy an investment.

Receipts for the week aggregated 246,484 bus., as against 302,526 bus. of the previous week. The total receipts for the past month were about 1,200,000 bus.

FLOUR.

The flour market here is very dull, orders from the South and South-east being only fair, with little or no demand from the East. Owing to many of the millers having freight contracts on foreign consignments, so as to take advantage of the 8c. rate before it advanced to 10c., a fair amount of export trade was indulged in during the first part of the week, about 20,000 sacks being shipped. Inland rates will soon suffer another advancement owing to the withdrawal of the lake-and-rail lines. This will naturally have a depressing effect on the milling market here. Prices have also fallen considerably of late and are quoted as follows: XXX 2.90@3.00; family, 3.15@3.25; choice, 3.40@3.70; fancy, 4.00@4.15; extra fancy, 4.30@4.45; patents, 4.75@4.85. Receipts for the week were 20,459 bbls., as against 17,500 bbls. of last week. Shipments amounted to 35,354 bbls. The mills were running about as usual and turned out about 67,000 bbls.

	FOR THE PAST FOUR WEEKS.
Alton City.....	3,800 14,600
Camp Spring.....	4,000 14,400
Carondelet.....	750 4,000
Crown.....	3,650 14,300
Eagle Steam.....	5,500 21,700
Hezel.....	1,300 5,150
Jefferson.....	3,500 12,900
Kehler.....	1,500 29,700
Merameo.....	1,600 5,500
Plant.....	8,500 22,900
Planet.....	7,000 25,000
President.....	3,600 14,100
Regina.....	2,800 10,800
St. George.....	2,900 5,400 (2 wks)
Victoria..... 13,500 (3 wks)
Yaeger.....	5,000 21,650
Total.....	61,000 224,600

NOTES.

I have to announce the death of Aug. Kalbfleisch, of the St. George Mill, of consumption, on Oct. 27th.

Mr. John W. Kauffmann, Pres. of the Merchants Exchange, is enroute home from Europe, where he spent the summer.

WALTER HOWARD BAIN.

St. Louis, November 15, 1890.

THE WINTER RESORTS OF FLORIDA AND THE SUNNY SOUTH.

At no time in the history of southern travel have the indications pointed to so brilliant a season at the Winter Resorts of Florida and the South as is promised for 1890-91. At Jacksonville, St. Augustine, and along the Indian River extensive preparations have been made for the entertainment of northern guests, and all visitors can rest assured of the old-time hospitality for which the southern host is famous. With its customary enterprise, the Big Four Route, "The Great Florida Line," has placed on sale round-trip tickets at greatly reduced rates, and made special preparations to handle the southern tourist business. All persons contemplating a trip to Florida should ask for tickets via that popular line. Solid vestibule trains run daily between Chicago and Cincinnati, equipped with private compartment buffet sleeping-cars, and elegant parlor cafe dining-cars, lighted by gas and heated by steam, making direct connection in Central Union Depot at Cincinnati with through trains for all points in the South. Ask for tickets via the Big Four Route.

D. B. MARTIN,
General Passenger Agent,
Cincinnati, O.

NEWS.—The Goshen Milling Co., Goshen, Ind., write that the wheat crop in their vicinity was a fine one both in yield and quality. Their mill is running steadily and their output for one week recently was nearly 2,800 barrels.

At Georgetown, Ky., E. N. Offut & Co. will build a grain elevator.

BROWN & BIDDLE are building a 150-barrel roller mill at Johnson City, Tenn.

BELL & CO., Boston, commission men, failed. Liabilities placed at \$500,000.

THE Clark-Warder Co., of Glasgow, Ky., is adding a corn mill to its flouring mill.

A STOCK company is being organized to erect a roller flour mill at Belton, Tex.

J. T. LEWELLYN's grist and saw mill at Vaundale, Ark., was burned recently.

AT Lisburn, Pa., Oct. 17, flour mills of J. A. Kunkle were burned. Loss, \$8,000; insurance, \$4,000.

AT Griffin, Pa., the flouring mill of Wm. Winters was burned Oct. 24. Loss \$9,000; partially insured.

AT Jamestown, Pa., Oct. 20, McQuiston & Co.'s flouring mill was burned. Loss, \$12,000; partially insured.

ST. LOUIS millers are using 25 per cent. of Oregon wheat, and some claim that they will soon use 50 per cent.

M. V. B. KITE, of Marksville, Va., is remodeling his mill to the roller system with a capacity of 25-barrels.

SEYMOUR J. NOBLE, senior member of the firm of Noble & Son, millers at Williamsport, Pa., died Oct. 25, aged 70 years.

THE Anchor Roller Mill Co., has been incorporated at Corydon, Ky., with a capital stock of \$50,000, to build a flour mill.

AT Cambridge City, Ind., Oct. 15, Pleasant Valley Flour Mills, owned and operated by Mr. Leggett, were burned. No insurance.

THE Wells elevator in Buffalo, N. Y., was destroyed by fire, Nov. 6th. Loss on elevator and grain estimated at \$250,000; insurance, \$80,000.

A STOCK company has been organized at Eddyville, Ky., by H. B. Lyons, and others, for the purpose of building and operating a 75-barrel roller mill.

The Southern Flour Co. has been incorporated by G. D. Rand and others at Richmond, Va. Capital stock \$100,000. They will build and operate a flour mill.

EXPORTS of Flour from Baltimore from January 1 to November 6 footed up 2,350,756 barrels, against 1,929,919 barrels for the corresponding period last year.

AT Edison, Neb., Oct. 17, the large elevator and mill of Anguish & Draper was burned. It caught fire from a spark from a passing engine. Loss, \$15,000; insured.

THE Page flour mill at Fergus Falls, Minn., has been closed by the sheriff. The mill has a capacity of over 600 barrels per day, but has not been running very much for the past several years.

THE Pioneer oatmeal mill at Portage la Prairie, Manitoba, was burned Oct. 31. The mill was owned by Johnson & Barclay, and was valued at \$12,000, including the elevator which was also burned.

AT Chicago, Ill., Nov. 16, Globe elevator on north pier was burned. The building had been leased to LeGrand Smith, of the Union Cold Storage and Warehouse Company. Loss on building and contents, \$40,000.

GEO. W. SMITH, a flour broker of Chicago, who was acquitted of a charge of embezzling \$1,700 from the Upham Manufacturing Co., of Marshfield, Wis., has brought suit against that company for \$50,000 damages for false arrest.

DR. JOSEPH I. TRIPPLETT of Mt. Jackson, Va., and others, composing the Staunton Steam Roller Mill Co., at Staunton, Va., have purchased machinery for a 200-barrel mill, which they expect to have in operation January next.

AT Palm Station, Pa., November 12, fire broke out in the grist mill of Monroe Snyder and communicated to the dwelling, saw mill and wagon shed. All buildings were destroyed, with a large quantity of grain. Loss, \$10,000; partially insured.

NEW YORK Flour dealers are claiming that Minneapolis millers are selling for direct exportation at 25c. to 30c. per barrel less than the price at which New York can sell the same Flour, which is held to mean that the rail or ocean rate, or both, is cut.

THE exports of breadstuffs from San Francisco, by sea from July 1, 1890, to October 22, 1890, as compared with the corresponding period of 1888-9 have been as follows: 1890—Flour, 372,286 brls.; Wheat, 3,042,393 cts.; 1889—Flour, 384,029 brls.; Wheat 3,761,547 cts.

AT Princeton, Ill., the Dole elevator owned by J. H. Dole & Co., of Chicago, was

burned on the morning of November 11. As the building had not been in use for several years the fire is supposed to have been caused by tramps. Loss \$20,000; insurance about \$10,000.

AN Atchison woman is getting a good deal of advertising because she succeeded in making a two-pound loaf of bread out of a pound of flour. The Kansas City Times remarks that if all the Atchison women make their bread as heavy as that, it is no wonder that the men are so dyspeptic.

THE Bonanza Roller Mill at Richmond, Ky., a large brick structure four stories high, and costing \$30,000, was burned Nov. 1. There was considerable quantity of wheat and flour in the mill and the loss is estimated at \$43,000 with an insurance of \$33,000. It was owned by Chenault, Burnham & Co.

COL. HOPE, of London, Eng., is at Ottawa, Ont., representing an English syndicate which proposes to utilize the vast water power in St. Mary's river at Sault Ste. Marie. A tail-race five miles long, will be constructed on the Canadian side and a canal five miles long and one mile wide on the American side. Numerous mills are to be erected on both sides of the river.

S. G. BROCK, Chief of Bureau of Statistics, reports a total export for the month ending October 31, of 862,170 barrels of wheat flour, representing a value of \$4,103,061. For the same month in 1889 the total export was 1,068,436 barrels, valued at \$5,132,544. The value of total export of breadstuffs for October 1890 is placed at \$8,343,703, and for the same month 1889 \$11,559,569, showing a decrease in value of \$3,215,866.

THE Portage Lake Canal, originally a private enterprise, is to be sold to the Government, and will be widened and deepened, furnishing a channel for the largest vessels, and enabling them to avoid the detour around Keweenaw Point, the most dangerous piece of navigation on Lake Superior. The works purchased include two canals, one five miles in length and connecting Portage Lake with Lake Superior on the east, the other 2½ miles long and making the connection to the westward. The price to be paid by the Government is \$350,000, and a considerable amount must be spent in dredging and deepening the channel through the lake.—*The Railroad and Engineering Journal*.

AMONG the late orders of The Jonathan Mills Mfg. Co., Columbus, Ohio, are two 26-inch Flour Dressers to The Yeager Flour Mill Co., Carlinville, Ill.; one 32-inch Flour Dresser to W. A. Clark, Van Wert, O.; one Air-belt Purifier, and one Wheat Cleaner to Texas Star Flour Mill Co., Galveston, Tex.; one 20-inch Scalper to P. H. Pillsbury, Washington, D. C.; two 16-inch, and one 20-inch Flour Dressers to Jas. B. Collins, Greenville, Va.; one 20-inch Flour Dresser to Geo. Wetengell, Guys Mill, P. I.; three Air-belt Purifiers to Homer Baldwin, Youngstown, Ohio; one 20-inch Flour Dresser to A. J. Jones, Alderson, W. Va.; one Air-belt Purifier to the Alliance Milling Co., Alliance, Neb.; three 20-inch Flour Dressers to Firebaugh & Ottson, Visalia, Cal.; one 36-inch Flour Dresser to Burns & Co., St. Joseph, Mo.; two Air-belt Purifiers to Miller, Jones & Co., Prospect, O.; one Air-belt Purifier to Hardesty Bros., Columbus, O.; six 20-inch Scalpers, five 20-inch Flour Dressers and two 30-inch Flour Dressers to J. H. Walker & Co., Reidsville, N. C.; two Air-belt Purifiers to Windsor Mills Mfg. Co., Windsor Mills, O.; one Air-belt Purifier to The Jewell Milling Co., at Brooklyn, N. Y.; one 26-inch Flour Dresser to D. G. Huhn, Saranac, Mich.; one 16-inch Flour Dresser to L. F. Wallbrecht, Wayland, Mich.; one 26-inch Flour Dresser to Hardesty Bros., Columbus, O.; one Air-belt Purifier to Homer Baldwin, Youngstown, Ohio.

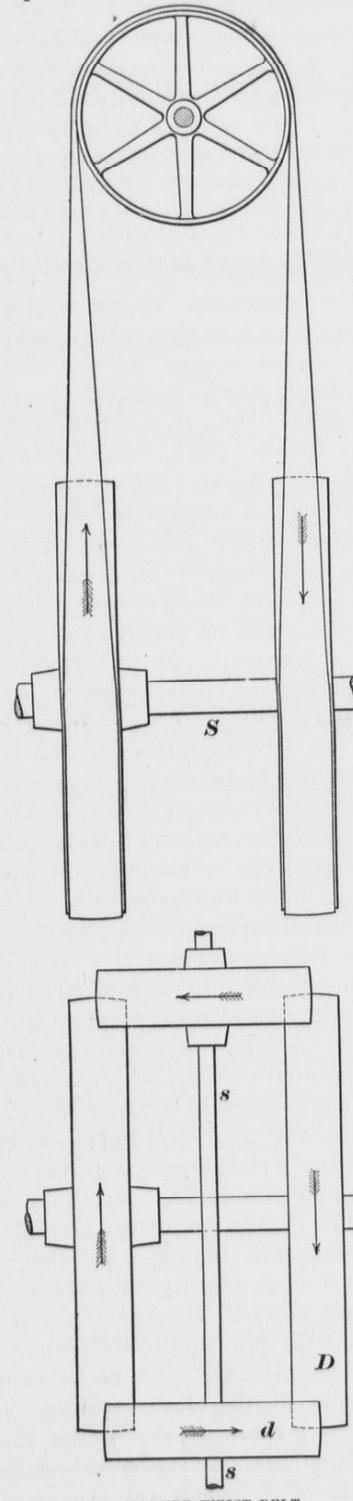
A SUBSTITUTE FOR QUARTER-TWIST BELTS.

IT sometimes happens that it becomes necessary to connect by belt two shafts which cross each other at right angles, one above the other, and the most common method of doing this is by the use of quarter-twist belts. Where the shafts are separated from each other a considerable distance, as compared with the width of the belt and diameter of pulleys which must be used, such a plan works tolerably well; but still it is better, as most mechanics fully understand, to avoid the use of such belts wherever possible. This is especially the case where the shafts are separated by a small distance only, and considerable power is to be transmitted, because these conditions require a wide belt or large pulleys, and sometimes both, which, when the distance between the shafts is short, makes the side pull

upon the belt excessive, and destructive to belt, as well as wasteful of power.

We receive a good many inquiries from our readers in regard to the least possible distance between shafts that a quarter-twist belt of given width can be run over pulleys of a given size, and though it is quite generally understood that such belts are regarded only in the light of necessary evils, that would be avoided if possible, we are convinced that the method of avoiding them, which we here illustrate, is not so generally known as it should be, or it would be more frequently met with. We cannot say to whom the credit of originating it belongs, and we have seen but one example of its use, which was at the Niles Tool Works.

The arrangement is shown in the sketch, in which *S* is the lower shaft from which the upper shaft *s* is driven, the speed of the latter being in this case twice that of *S*, though it is apparent that the pulleys on the respective shafts can be of any desired



QUARTER TWIST BELT.

proportion to each other, so long as both pulleys on the same shaft are of the same diameter, and are placed at a distance from each other, "center to center," equal to the diameter of the pulleys on the other shaft.

The pulley *D* is the driver in this case, *d* being the driven pulley, the other two pulleys being loose on the shafts and provided with long bearings and collars to keep them in proper position.

The long bearing is made more important in this case by the fact that the respective shafts and their loose pulleys revolve in different directions, making the relative speed of the rubbing surfaces twice what it would be in the case of an ordinary loose pulley at the same belt speed. The shaft can in this case revolve in either direction equally well, which is not the case with quarter-twist belts, and there is no distortion or sidewise straining of the belt. Another advantage where this

is used in close quarters is that the belt is about twice as long as by the ordinary driving. There is probably some increase of friction, though not necessarily very much.

It is preferable to arrange as in the cut, so that the belt will pass directly from the driven pulley to the driver, as, if it passes over the loose pulleys while under the strain due to the work, the loss of friction will be much increased.

This latter condition would obtain if the relative positions of the pulleys in the cut remained the same, but the direction of motion were reversed.

There is no doubt that there are many situations where quarter-twist belts are in use, that it would pay to replace them by such an arrangement as this.—*American Machinist*.

AERIAL NAVIGATION.

IN concluding an article on the above subject, O. Chanute, C.E., of Chicago, says:

To sum up, therefore, the present "State of the Art"—if it has yet progressed sufficiently to be called an art—may be stated as follows:

A measurable success has been attained with navigable balloons. They have been driven 14 miles per hour, and it is probable that speeds of 25 to 30 miles an hour or enough to go out when the wind blows less than a brisk gale, are even now in sight. Very much more speed than this is not likely to be obtained with balloons, for lack of sufficiently light motive power, and because of unmanageable sizes.

Much greater speed can perhaps be attained eventually with aeroplanes; recent investigations indicate this; but even a beginning is prevented by the lack of a light motor, and by questions as to the stability of the apparatus as well as to safe ways of gaining high initial velocities. Whether these difficulties will ever be overcome no one knows, but they indicate the direction for investigation and experiment, while the probable benefits to man of a solution of the problem are so great that they are well worth striving for.

Success with aeroplanes, if it comes at all, is likely to be promoted by the navigable balloon. It now seems not improbable that the course of development will consist, first in improvements of the balloon, so as to enable it to stem the winds most usually prevailing, and then in using it to obtain the initial velocities required to float aeroplanes. Once the stability of the latter is well demonstrated, perhaps the gas-bag can be dispensed with altogether, and self-starting, self-landing machines substituted, which shall sail faster than any balloon ever can.

If we are to judge the future by the past, such improvements are likely to be won by successive stages, each fresh inventor adding something to what has been accomplished before; but still, when once a partial success is attained, it is likely to attract so much attention that it is not impossible that improvements will follow each other so rapidly that some of the present generation will yet see men traveling through and on the air at speeds of 50 to 60 miles per hour.

"THE FINEST ON EARTH."

The Cincinnati, Hamilton & Dayton R. R. is the only line running Pullman's perfected safety vestibuled trains, with chair, parlor, sleeping and dining car service between Cincinnati, Indianapolis and Chicago, and is the only line running through reclining chair cars between Cincinnati, Keokuk and Springfield, Ill., and combination chair and sleeping car Cincinnati to Peoria, Ill., and the only direct line between Cincinnati, Dayton, Lima, Toledo, Detroit, the lake regions and Canada.

The road is one of the oldest in the State of Ohio and the only one entering Cincinnati over twenty-five miles of double track, and from its past record can more than assure its patrons speed, comfort and safety. Tickets on sale everywhere, and see that they read C. H. & D., either in or out of Cincinnati, Indianapolis, or Toledo. E. O. McCORMICK, General Passenger and Ticket Agent, Cincinnati, Ohio.

LOW-WATER ALARMS.

SEVERAL new devices for indicating the height of water in a boiler, and giving an alarm of some kind if it should from any cause, fall below the safety limit, have lately been brought out. Some of these devices are also arranged to give an alarm if the level of water gets too high. One apparatus for this purpose consists of a small brass cylinder which is attached to a pipe that leads from the boiler at the low water line. At the top of the cylinder is a short extension that carries in its end a fusible metal plug that melts at a low temperature. When this device is attached to a boiler the water, if above the point at which the pipe is attached, will enter the tube and compress the air contained in the cylinder, which prevents the water from coming in contact with the fusible plug, but no harm would be done if it should, for while water is in contact with the plug it will not melt. But should the water in the boiler fall below the end of the pipe all the water in the cylinder and pipe will run out and steam will enter in its place and come in contact with the plug, when the amount of heat given up by the steam will soon melt the plug and allow the steam to blow through the opening and act on a small whistle. This will call attention. To insert a new plug it is only necessary to close a valve that is located between the cylinder and the plug, unscrew the whistle and insert a new plug. The whistle can then be replaced and the valve opened and locked in this position, when it is then ready to again sound an alarm if carelessness or oversight permits the water to again get below the defined limit. Another device for the same purpose, but one which employs electricity to give the alarm, consists of a water column connected to the boiler by pipes three or four feet long and projecting horizontally. This device works by gravity or the weight of water it may contain. As the height of water in the boiler is increased, the weight of water in the column is also increased as the water is free to circulate through the pipes which connect to top and bottom of the column. As the column is free to move, the weight of the water presses it down until it comes in contact with the point of a wire which completes an electric circuit through a bell. If the water in the boiler gets low the column is emptied and its weight reduced, when the spring of the pipes causes it to raise and make contact above, which completes the circuit and rings the bell.

Another device for giving an alarm when the water in the boiler gets too low utilizes the expansive force of a copper tube. Connection is made on the top of the boiler with a tee and nipple. A copper tube three feet long and one and one-half or two inches in diameter is fitted with locknut and bushing, which screws into the top opening of the tee, and a piece of pipe screwed into the bushing reaches down through the tee to the low water line. A whistle is connected to the side opening of the tee by a nipple and elbow. The whistle lever is connected by an iron rod to a projection on the top of the copper tube and its length may be adjusted by a nut on the threaded portion at the end of the rod. With this alarm, when there is plenty of water in the boiler, the copper tube and the extension which reaches to the low water line, are kept full of water, and the copper tube remains the same length; but so soon as the water gets low in the boiler the water runs out of the pipes, which immediately fill with steam and are lengthened by the increase of heat and pull on the iron rod connected to the whistle lever and an alarm is sounded which continues until the whistle valve is closed by hand or the level of water in the boiler is raised sufficient to cover the end of the pipe again. It is evident that so long as the end of the pipe is covered with water there will not be sufficient expansion in the pipe to

cause the whistle to blow. In other devices for indicating a stage of low water or the height of the water in the boiler, a float inside of the boiler is used. This float is generally a hollow globe of copper, made water and steam tight and having sufficient strength to withstand the pressure. A globe is the best shape for this purpose. The globe floats on top of the water and is attached to an arm a couple of feet in length, the other end of the arm being attached at right angles to a short rod that passes through the boiler head and a stuffing box. The outer end of this rod is fitted with a pointer, that, working over a dial, indicates the height of water in the boiler, or the end of the rod may be made square and fitted with a cross piece; wires leading from this to the valve in suction pipe of pump will make an excellent automatic water regulator, as the height of the float will control the supply of water, keeping it at the same height at all times. About the only trouble experienced with the regulators or indicators which employ a float is that in spite of the best material and careful workmanship the floats sometimes spring a leak. Blocks of wood have been used for a float but these soon become water soaked and useless.—*The Stationary Engineer*, (Chicago.)

HIDDEN DANGERS IN DAM BUILDING.

IN the construction of water storage dams there is an element of insecurity to be guarded against in some cases, which does not seem to have been publicly noticed. John D. Emersly, in *Mining and Scientific Press*, referring to the swelling of the ground under or near the dam, considers it a source of danger. A valley or wide ravine with a slight descent, and having side hills coming near to each other at its lower end, is economically favorable for water impounding purposes, provided that the collecting surfaces above are large enough to insure the supply required. In the arid regions such a valley is usually so dry that, on the side hills at least, the general water level can only be reached by deep sinking. If solid primary rock, with little permeability, is available in founding the dam, its bulk, when submerged, will not increase; but if dependence is placed on a stratified formation containing layers of clay, talc or shale, its expansion when exposed to pressured water must certainly be expected. Every old miner has had trouble with swelling or "creeping" ground, and builders of escarpment walls are aware how hard it is to keep some kinds of rock in place during wet weather.

Assuming that a dam has been built on an unstable foundation of the kind described, what will the effect be when a pressure of fifty, seventy or 100 feet of water comes upon it? The whole "country rock" above the dam will, in the centre of the ravine especially, both underneath and outside of the dam building, be saturated to a great depth. Under the abutments on the converging side hills the pressure will be less, yet every pore and interstice will be filled. Should there be the slightest tendency of this water-charged rock to expand, either laterally or vertically, it is easy to understand how even a dam, in itself well planned and carefully built, may in time give way to such expansion.

The sapping and weakening effects of water percolating under high pressure may go on for years without being noticed, but if the dam erection is ultimately, though it may be imperceptibly, lifted or compressed by the slow swelling of the ravine or hillside formations, so that cracks and veinlets are formed in or beneath it, increased pressure may suddenly destroy it.

The wearing or mechanical effects resulting from a sweating process going on in a dam, or the rock underlying it, is not the only evil which is to be feared. The air acting on wet surfaces promotes chemical changes which are followed by disinte-

gration of the affected rocks, and thus slowly, yet surely, there may be destructive agencies at work where least expected.

Should there be veins of porous rock dipping under a dam from its upper side, the passage of water through such veins may of itself prove a hidden cause of disaster. The escape may be small at first, but a softening and widening work going on for years cannot fail to weaken a heavy dam building not very far above it.

If I am right, continues the author, in assuming from reasons stated above that the building of dams on some kinds of stratified rock render them unsafe, I trust by calling attention to the subject to encourage investigation and the adoption of adequate engineering remedies. It would be some satisfaction to know whether the Johnstown and Walnut Grove dams were built on stratified rocks. If they were, affording evidence long before they collapsed, which they did not give when first in use, that cracks had been opened in them, it is reasonable to assume that they had been injured by the expansion of the foundation and hillside rocks.

THINGS TO REMEMBER ABOUT SHAFTING.

DON'T buy light hangers and think they will do well enough, when your own judgment tells you that they will spring.

Remember that shafting is turned one-sixteenth inch smaller than the normal size.

Cold rolled and hot rolled shafting can be obtained the full size.

The sizes of shafting vary by quarter inches up to three and a half inches.

The ordinary run of shafting is not manufactured longer than from 18 to 20 feet.

For line shafts never use any that is smaller than one and eleven-sixteenths inches in diameter, as the smallest diameters are not strong enough to withstand the strain of the belts without springing.

The economical speed of shafting for machine shops has been found to be from 125 to 150 revolutions per minute, and for wood working shops from 200 to 300 revolutions.

A jack-shaft is a shaft that is used to receive the entire power direct from the engine or other motor, which it delivers to the various main shafts.

Keep the shaftings well lined up at all times and this will ward off a breakdown and avoid a waste of power.

Know that the pulleys are well balanced before they are put in position, as a pulley much out of balance is quite a sure method to throw shafting out of line.

Look to the pulleys, and see that they have been bored to the size of the shaft, for unless this is done the pulley may be out of center on the shaft and prevent smooth running.

If possible, apply the power to a line of shafting at or near the center of its length, as this will enable you to use the lightest possible weight of shafting.

Hangers with adjustable boxes will be found to be the most convenient for keeping the shafting in line.

Keep your drip cups cleaned, and do not allow them to overflow or get loose.

Have a supply of tallow in the boxes; in case of accidental heating it will melt and prevent cutting; this rule while good for general use applies particularly to special cases where there is a supposed liability to heating.

Never lay tools or other things on belts that are standing still, for they may be forgotten and cause a break-down when the machinery is started.

Don't attempt to run a shaft in a box that is too large or too small, as you waste time and fail to secure good results.

A loose collar held by a set screw will cause the collar to stand askew, and it will cut and wear the box against which it runs.

In erecting a line of shafting the longest sections should be placed at the point where the power is applied. The dia-

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ter can then be gradually decreased towards the extremities remote from this point.

Don't put loose bolts in plate couplings, as this will give no end of trouble in shearing and wearing away of the bolt holes.

Don't think that because your shafting has been well erected, and you oil it regularly, that it will never need any inspection or repairs.

Don't try to economize in first cost by having long distances between hangers, for a well supported shaft will always do the best work; short shafts are the surest to be straight and to remain so.

The length usually adapted to shafting bearings is twice to four times the diameter of the shaft, varying with the diameters of shaft, kind of bearings and the material used in them. Large shafts in the gun metal or bronze boxes may have bearings only twice their diameter in length. Cast iron bearing up to and including three inch shafts are often made four diameters of the shaft in length, particularly for self adjusting hangers.

If babbitt is used for the boxes use only a good material; do not adopt the common mixture of tin, antimony and lead.

Insist upon having good iron in your shafting as the bearings will take a finer polish and you will not be subject to sudden ruptures.

If the strain on a pulley is so great that the set-screws already in will not hold it, do not let them score in the shaft, but put in an extra screw, or cut a key-way and put in a key.

The width of a key should be one-quarter of an inch for each inch of diameter of the shaft.

The depth of the key-way is one-half its width.—*Western Machinist*.

THE COMMERCE OF THE GREAT LAKES.

Few people, says an exchange, who live at a great distance from the great lakes have an adequate conception of the magnitude of their commerce. It will surprise them, perhaps, to learn that during the 234 days of navigation last year tonnage passed through the Detroit river to the amount of 10,000,000 tons more than the entries and clearances of all the seaports in the United States, and 3,000,000 tons more than the combined foreign and coastwise shipping of Liverpool and London. Nor does this include traffic between Lakes Superior and Michigan, or Lakes Erie and Ontario, or local traffic between ports on these lakes.

ALL persons desiring to reach the entire milling and grain trade of America, by circular or otherwise, should obtain a copy of CAWKER'S AMERICAN FLOUR MILL AND GRAIN ELEVATOR DIRECTORY FOR 1890-91.

ORGANIZATION OF MILLERS IN THE UNITED STATES.

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MILLING AND MECHANICAL NOTES.

[Compiled for the UNITED STATES MILLER AND MILLING ENGINEER.]

MINERAL asbestos in conjunction with white lead is being used with great success in joining rough cast iron surfaces, resisting heat and steam and rough usage. Perhaps its best recommendation is that it cannot burn.

WHENEVER you take a new man into the shop to work, try and find out as soon as possible which particular part of your work he is best adapted to do, and get him at it; never let a man or machine labor under any disadvantage; it doesn't pay.

LEAKS around joints—cylinder heads and chest bonnets and the like—soon eat away the metal, bringing about a condition difficult to contend with. The moral is: Stop all leaks around boilers and engines, not alone, or principally, perhaps, for the steam wasted, but for the damage such leaks will do.

HAVE a hole $\frac{1}{4}$ inch in diameter drilled through your hand-saws, near the end. You can then hang them up easily on wooden pegs. The handle will be near you and with the movement of but one hand you obtain your saw in position ready for use. Saw makers will doubtless soon make all saws with holes in them.

THEY say that the pile if sharpened, rarely has its point in the neutral axis and that the blows of the hammer are not applied so that the action line of the force passes through the point, and hence a couple is introduced, tending to strain and weaken the timber. If, on the other hand, the pile is left blunt, the consolidated earth forms a point which, changing with each blow, keeps itself continually in the line of force, and hence the straining couple is not introduced. In ordinary practice, however, the pile is tapered somewhat at the lower end, although not sharpened to a point.

THE simplest and most efficacious method of thoroughly cleaning the various parts of machinery that have become gummed and dirty by the use of fat oils, for lubricating purposes, is by using a strong soda lye. For each 1,000 parts by weight of water, take about 10 or 15 parts by weight of caustic soda or 100 parts ordinary soda. Let the solution boil and enter the parts to be cleaned; either boil them in this lye or let them steep in it for some time. All the dirt and oil resin is completely dissolved thereby, and it remains only to rinse and dry the parts. The action of the lye is such that it enters into combination with the oil and forms soap, which is readily soluble in water. In order to prevent the hardening of the lubricant on the machinery parts it is only necessary to add about one-third kerosene. An occasional lubricating with kerosene alone is to be recommended.

WANTED.

A good second miller. Apply to
LA VALLE ROLLER MILLS,
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WANTED—SITUATION.

A gentleman well acquainted with the flour business, both export and domestic, desires to represent some good northwestern mill, either in the lake cities, eastern cities or abroad, or would take the management of a mill.

Address, "Y," UNITED STATES MILLER,
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FOR SALE—In Wisconsin.

125-bbl. roller flour mill, 4 stories, frame with stone basement, including plenty water power for 4 water wheels. Flume, dam and mill in good condition. Frame warehouse and office close by, and long sheds for farmers' teams. The whole property in full operation 16 hours daily, doing profitable business. Has big grist business. City of 2,000 population; two railroads. Good trade with citizens, farmers and lumbermen, for flour, feed and rye. Good local grain, and plenty of it. Good place to live, has good schools and churches, and close to other large cities. Owner non-resident, which is reason for selling. Address,

MENASHA WOOD SPLIT PULLEY CO.,
4-tf MENASHA, WIS.

Flour Mill and Elevator.

The undersigned are prepared to receive offers for the purchase of a 200-barrel steam power roller process flour mill, situated on the main line of the Canadian Pacific Railway, in the center of one of the best wheat growing districts of the Northwest, at a point specially suited for the trade of British Columbia and Eastern markets. Also three grain elevators situated at good centers for the purchase of wheat, having a combined storage capacity of about 65,000 bushels. For further information apply to Osler & Hammond, Toronto, Ont., or to Osler, Hammond & Nanton, Winnipeg, Man. 9-3t

MILL FOR SALE.

At Alma, Wis., a first-class water power custom flour mill. A 3 roller mill, one smooth roller, one Whiting buhr and one 4 ft. buhr for grinding feed. Has all the latest improvements. Located in one of the best wheat-growing counties in Wisconsin, three miles from the city of Alma, on railway. For further particulars address,

PETER KLEINER,
11tf Alma, Wis.

Scribner's Magazine

For the coming year will be noteworthy for a number of special features which the Publishers believe are of very unusual interest, and among them the following may be mentioned:

SIR EDWIN ARNOLD

contributes to the December number the first of a series of four *Articles upon Japan*, its people, its ways, and its thoughts. Mr. Robert Blum, who was commissioned to go to Japan for Scribner's Magazine, has prepared a very remarkable series of drawings to illustrate Sir Edw. I.'s papers. *Articles upon the recent Japanese Festival* will follow, illustrated by Mr. Blum.

HENRY M. STANLEY

has prepared for the January number an important article upon "The Pigmies of the Great African Forest". Another contribution in this field will be Mr. J. Scott Keelie's account of the recent African exhibition held in London. Both papers will be amply illustrated.

THE WRECKER,

a Serial Novel by Robert Louis Stevenson and Lloyd Osbourne, will run through a large part of the year. Illustrated by Hole. A two-part story by Frank R. Stockton will also appear.

PROF. JAMES BRYCE, M. P.,

author of "The American Commonwealth," will write a series of *Four Articles upon India*, embodying the results of his recent journey and studies on this land of never ending interest.

OCEAN STEAMSHIPS

will be the subject of an important series somewhat upon the lines of the successful Railroad Articles, "Passenger Travel," "The Life of Officers and Men," "Speed and Safety Devices," and "Management," are some of the subjects touched upon and illustrated.

GREAT STREETS OF THE WORLD

is the title of a novel collection of articles on which the author and artist will collaborate to give the characteristics of famous thoroughfares. The first, on Broadway, will be written by Richard Harding Davis, and illustrated by Arthur B. Frost. Others will follow on Piccadilly, London; Boulevard, Paris; The Corso, Rome.

The price of *Scribner's Magazine* admits of adding a subscription to one's other reading at very small cost. Orders should be sent at once.

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At Groton, South Dakota, in the hard wheat region, on the Hastings & Dakota Division of the C. M. & St. P. Ry., 20 miles east of Aberdeen. Steam power elevator, 20x30, and annex, 30x40, cribbed and bolted, with scales and all necessary appurtenances complete. Storage capacity 30,000 bushels. Purchases of wheat the past six years have averaged 80,000 bushels per annum. Will be sold for \$3,500 to close up an estate. Original cost \$5,960. Apply to

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Admirably located for a jobbing and retail trade, near the center of the state, with outlet on two railroads with good facilities for getting the best varieties of hard spring wheat from northwestern Iowa, Nebraska and Dakota, and winter wheat from Kansas. A full roller mill with nine sets of rolls and two 4-foot middlings buhrs and one 4-foot buhr for feed and meal, together with all necessary machinery and tools in good repair. Two new steel boilers and engine with ample power. Situated on railroad track. Fuel used is coal at 75¢ to \$1 per ton. The elevators have a capacity of 50,000 bushels, and are well adapted for buying and shipping grain with dumps. A number one corn sheller and cleaner, two sets of platform scales, etc., etc. A good office with steam heating. The buildings, except office, are of brick, with brick smokestack.

Boone is one of the best towns in Central Iowa, with excellent schools and a population of about 7,000. This property must and will be sold soon. For full particulars promptly address,

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1891.

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ILLUSTRATED.

The important series of papers on South America, by THEODORE CHILD, will be continued in HARPER'S MAGAZINE during the greater part of the year 1891. The articles on Southern California, by CHARLES DUDLEY WARREN, will also be continued. Among other noteworthy attractions will be a novel by CHARLES EGERTON CHADDOCK; a collection of original drawings by W. M. THACKERAY, now published for the first time; a novel written and illustrated by GEORGE DU MAURIER; a novelette by WILLIAM DEAN HOWELLS; and a series of papers on London by WALTER BESANT.

In the number and variety of illustrated papers and other articles on subjects of timely interest, as well as in the unrivaled character of its short stories, poems, etc., HARPER'S MAGAZINE will continue to maintain that standard of excellence for which it has been so long distinguished.

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Special Supplements will be continued in 1891. They will be literary, scientific, artistic, historical, critical, topographical, or descriptive, as occasion may demand, and will continue to deserve the hearty commendation which has been bestowed on past issues by the press and the public. As a family journal, HARPER'S WEEKLY will, as heretofore, be edited with a strict regard for the qualities that make it a safe and welcome visitor to every home.

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The Northern Pacific Railroad, passing through Minnesota, Dakota, Montana, Idaho, Oregon and Washington was the first line to bring the region occupied by these States, into communication with the East. Its main line and branches penetrate all sections of these States reaching nine-tenths of the chief cities. It is the short line to Helena and Butte, Mont., Spokane Falls, Tacoma and Seattle, Wash., and Portland Ore., and the only line running through train service from the east, through the States of Montana and Washington. Pullman Sleepers and furnished Tourist Sleeping Cars are run via the Wisconsin Central and Northern Pacific, and Pullman Palace Sleeping Cars, via Chicago, Milwaukee & St. Paul and Northern Pacific, from Chicago through to the Pacific coast without change. This is the Dining Car and Yellowstone Park Route.

The large travel on the Northern Pacific line necessitated the inauguration in June 1890, of a second through train to the Pacific Coast, thus enabling this road to offer the public the advantage of two through trains daily to Montana and points in the Pacific Northwest, carrying complete service of sleeping cars, dining cars and regular day coaches. The train leaving St Paul in the morning runs via the recently completed Air-Line of the Northern Pacific through Butte, Mont., making this the shortest line to the latter point by 120 miles.

Colonists for Washington, Oregon and British Columbia points should take no other line than the Northern Pacific, as by this line only can all portions of the State of Washington be seen. Stop-overs are allowed on second-class tickets at Spokane Falls and all points west enabling settlers to inspect the country without extra expense.

For Maps, Time Tables, and Illustrated Pamphlets, or any especial information desired, address your nearest ticket agent, or Chas. S. FEE, Gen'l Pass. and Ticket Agent, St Paul, Minn.

RECENT MILLING PATENTS.

The following is a list of patents relating to Milling and Grain-handling appliances granted during the month of October, as especially reported for the U. S. MILLER, by Chas. E. Brock, Patent Attorney, Pacific Building, Washington, D. C.:

No. 437,699. Mill-stone. L. H. Letz, Crown Point, Ind.

No. 437,718. Sieve. T. Parkinson, G. M. Parkinson, Doncaster, Eng.

No. 437,756. Grinding-mill. D. R. Green, F. R. Fisher, Waterloo, Iowa.

No. 437,802. Combined feed-cutter, thresher and separator. P. B. Still, Woodstock, Ill.

No. 437,891. Grain-cleaner attachment. J. Grider, La Grange, Cal. This covers the combination, with a shoe of the separator, of the transversely-reciprocating rakes moving laterally across its surface from the sides thereof toward the center.

No. 437,942. Flour and middlings separator. C. F. Shumaker, Silver Creek, N. Y.

No. 437,950. Apparatus for germinating grain. P. G. Toepper, Milwaukee, Wis.

No. 437,951. Machine for stretching screen-wire. J. L. Ulsh, Wabash, Ind.

No. 437,987. Pea-shelling machine. J. W. Harbin, New York, N. Y.

No. 438,129. Grain-adjuster. G. H. Flint, Lodi, Wis.

No. 438,287. Flour-bolt. R. L. Hawkins, Dadeville, Mo.

No. 438,370. Grain-meter. J. S. Chase, New Salem, Kans.

No. 438,523. Dust-collector. E. Bretney, Indianapolis, Ind. This covers a dust-collector formed with suitable inlet and outlet openings, the separating-chambers of which are of annular form throughout its length.

RE-ISSUE.

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"Howly Moses, Tim, it's murtherin' ill ye're lukin'! Fwhat in the name av the braken's the mater?"

"Finucane!"

"Yis."

"Ye know that blatherin' spaldeen ava Widdy Costagin's second husband's stepson Jamie."

"That I do."

"He bet me a dollar to a pint I couldn't schwally an egg widout brakin' th' shell uv it."

"Naw!"

"Yis."

"Did ye do ut?"

"I did."

"Then fwhat's ailin' ye?"

"It's doon there. I can fale it rollin' around. If I jump about I'll break it an' cut me stummick wid th' shell. If I kape quiet the dam thing'll hatch oot, and I'll have a Shanghai rooster a-clawing me insides."

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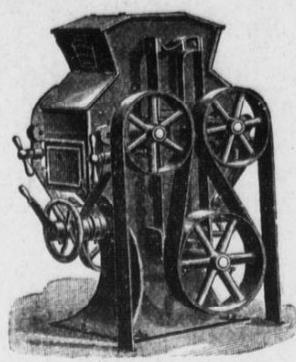
THE TABLE OF EXPRESS TRAINS.

STATIONS. DEPART. ARRIVE.

Champion, Republic, Iron Mountain,	11:05 P. M.	*3:30 A. M.
	12:00 A. M.	6:55 P. M.
	6:30 A. M.	6:55 P. M.

Menominee, Marinette, Oconto, Green Bay, De Pere,	11:15 P. M.	*3:30 A. M.
	12:00 A. M.	6:55 P. M.
	6:30 A. M.	6:55 P. M.

Appleton, Menasha, Neenah	11:05 P. M.	*3:
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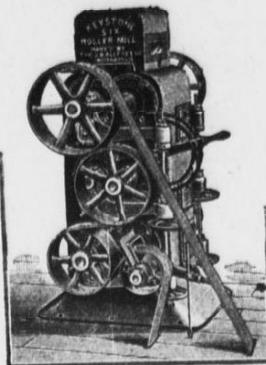
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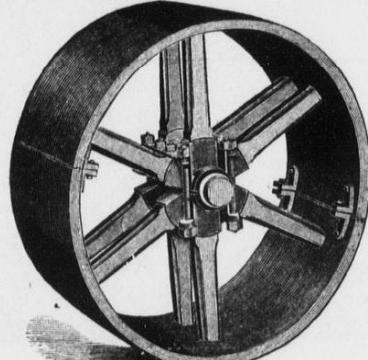
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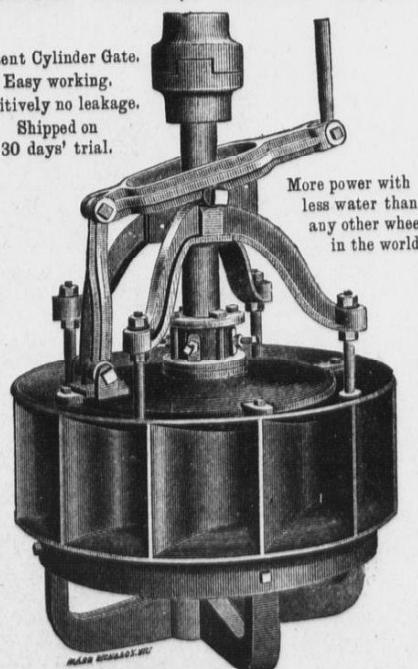
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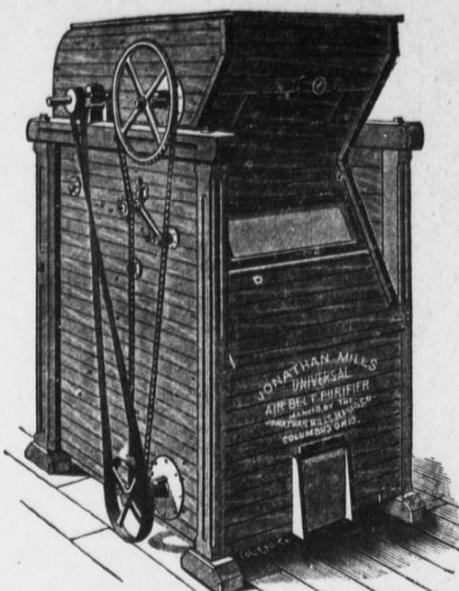
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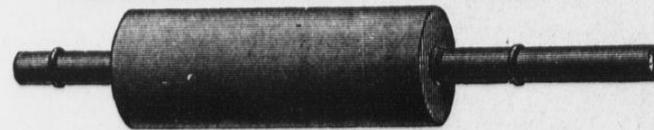
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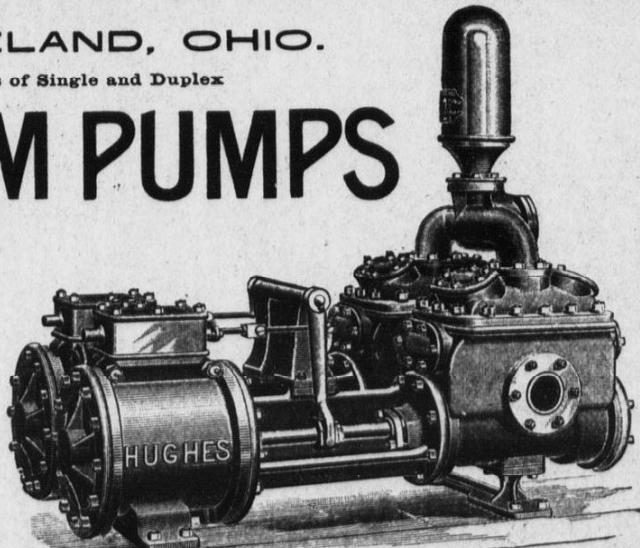
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